PRZEDSIĘBIORSTWO HANDLOWE EXPORT - IMPORT

45-323 Opole, ul. Zielonogórska 3
tel. +48 (77) 455 60 76, fax +48 (77) 455 80 56

e-mail: cust@atel.com.pl www.atel.com.pl NIP: 754 020 00 54 REGON: 004507003

#03058 RP-FSO02A

USER'S MANUAL

FXSO GATEWAY
User Manual

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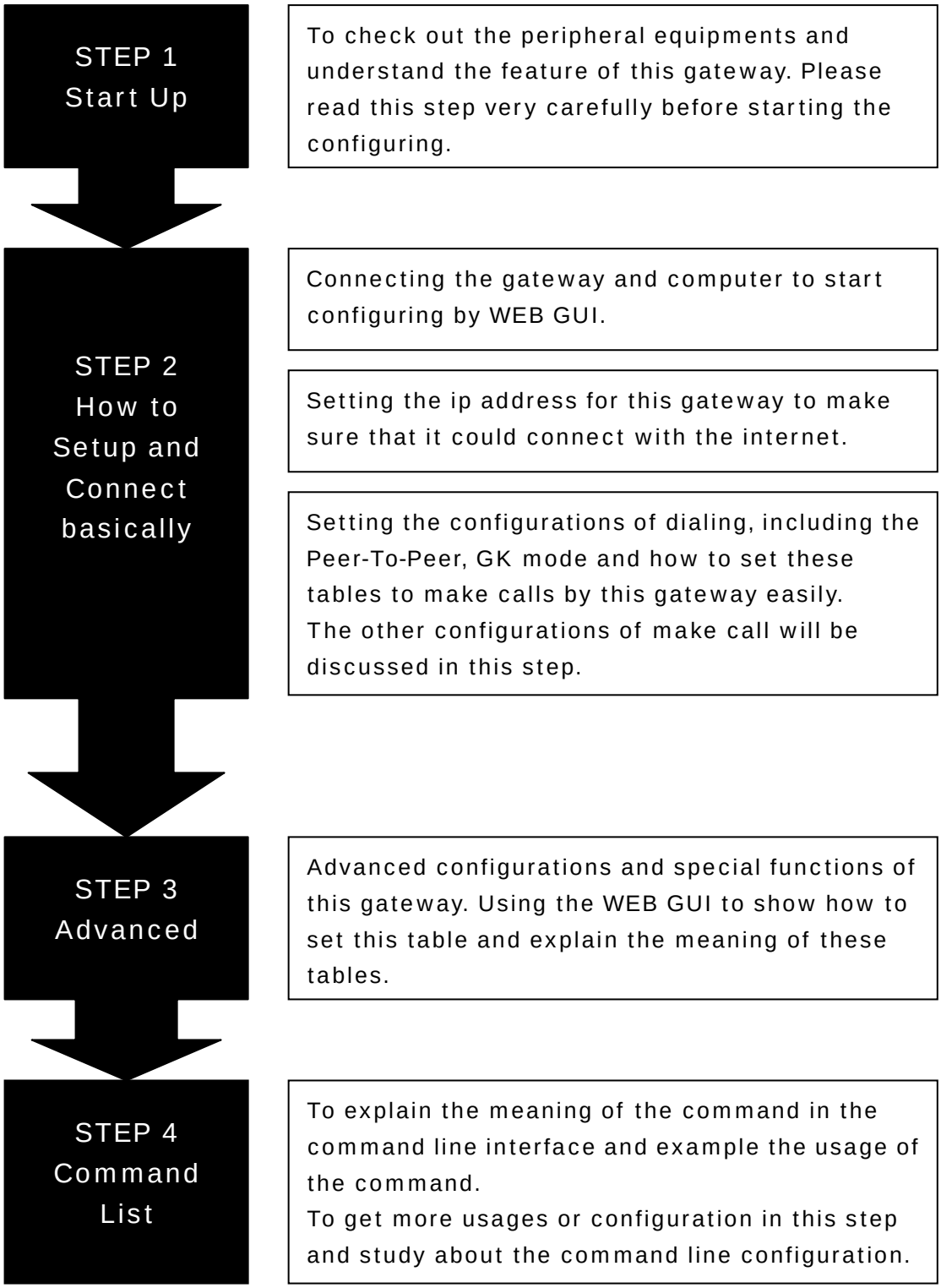
Steps in configuration


STEP 1
Start Up
To check out the peripheral equipments and understand the feature of this gateway. Please read this step very carefully before starting the configuring.
STEP 2
How to
Setup and
Connect
basically
Connecting the gateway and computer to start configuring by WEB GUI.
Setting the ip address for this gateway to make sure that it could connect with the internet.
Setting the configurations of dialing, including the Peer-To-Peer, GK mode and how to set these tables to make calls by this gateway easily.
The other configurations of make call will be discussed in this step.
STEP 3
Advanced
Advanced configurations and special functions of this gateway. Using the WEB GUI to show how to set this table and explain the meaning of these tables.
STEP 4
Command
List
To explain the meaning of the command in the command line interface and example the usage of the command.
To get more usages or configuration in this step and study about the command line configuration.

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1. Start Up

1.1 Introduction

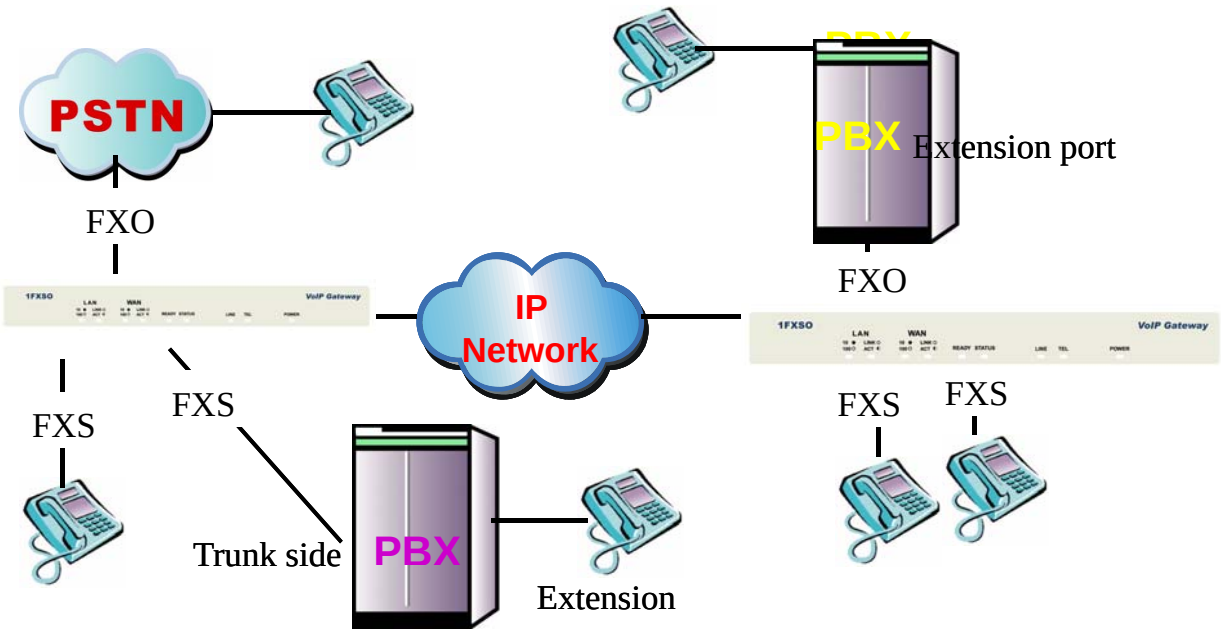
2FXSO/1FXSO is a one-port/two-port FXS+FXO gateway. It supports an innovative intelligent call rouging function that transparently routes calls to destination either through PSTN or Internet.

2FXSO/1FXSO provides voice over IP and FAX over IP services for ITSP/ISP Internet Telephony Services Provider and Office/SOHO IP-PBX application.

Application Architecture

FXO ports can connect with PSTN Line or Extension Line of PBX

- ***FXS ports can connect with Phone Set or Trunk Line of PBX***



1.2 Features and specification

Features

- ITU-T H.323 v2/v3/v4 compliance
- Automatically Dial Path Selection (IP or PSTN)

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- PSTN Line switch to telephone set when power is failure
- PPPoE support
- Behind NAT router or IP sharing device
- DNS server inquiry
- Automatically Gatekeeper Discovery
- Provide Peer-to-Peer Mode (Non Gatekeeper needed) selection
- E.164 Dial Plan
- TFTP/FTP software upgrade
- Remote configuration/ reset
- LED indication for system status
- MS-NetMeeting v3.0 compatible
- Support Fix IP and DHCP
- Parameters of VoIP packet

Audio feature

- Codec -- G.711 a/ μ law, G.723.1 (6.3kbps), G.729, G.729A
- G.168/165-compliant adaptive echo cancellation
- Dynamic Jitter Buffer
- Completed voice band signaling support
- Provide In-band or Out-band DTMF generation/detection
- Provide call progress tone

Management Feature

- TELNET/Console port and Web Browser configuration

Certification

- UL, CE, FCC

FXS Features

- 2-wire loop start
- Programmable On-Hook voltage, Ring voltage/Cadence/Frequency, Loop current
- Line polarity reversal generation

FXO Features

- 2-wire loop start
- Support auto-attendant (Tone or voice greeting)

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- PSTN polarity reversal detection
- Provide 2nd dial tone to PSTN
- Disconnect tone detection
- Asking ping function with the inside or outside calls

Environmental

- Operation temp:0˚C to 40˚C
- Humidity: 10% to 90% (Non-condensing)

1.3 Accessories and equipment

- The voice gateway in 2/4 FXS ports models and only one RJ-45 connector (WAN) or two RJ-45 connector (WAN and LAN).
- The AC adapter.
- The CD of user manual.
- The connection cable in RS-232 interface.

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1.4 Appearance

Front panel: The LED lights provide related system messages of the gateway.

1FXSO

2FXSO

Power: Light on means Gateway is power on, and vice versa.
TEL: Light on means the line is in use (off-hook), and vice versa.
LINE: Light on means the line is in use (off-hook), and vice versa.
Status:

1. LED light on means Gateway has successfully registered to Gatekeeper when it is in Gatekeeper Mode.
2. LED flash means Gateway is not registered to Gatekeeper when it is in Gatekeeper Mode.
3. Or when Gateway is in downloading mode, LED should be flash as well.
4. LED light off means Gateway is in Peer-to-Peer Mode.

Ready:

1. Light on and slow flash means Gateway is in normal mode.
2. Light on and fast flash means Gateway is in downloading mode.

WAN: Connected to Public Ethernet

1. Line- LED light on means Gateway is physically connected to the Ethernet correctly.
2. ACT- LED light on and flash when Ethernet data is being transmitted / received.

LAN: Switch to another device, such as PC

1. Line- LED light on means Gateway is physically connected to the Ethernet correctly.
2. ACT- LED light on and flash when Ethernet data is being transmitted received.

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Back panel:

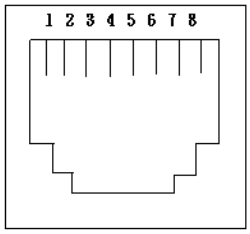
1FXSO

2FXSO

1. **Ethernet Port**

   LAN/WAN: 10/100 Base-T; RJ-45 socket, complied with ETHERNET 10/100base-T.

   The pin-out is as following:



PIN 1, 2: Transmit

PIN 3, 6: Receive

2. **COM:**

   RS232 console port (DB-9pin **male** connector)

   Note: use straightforward cable to connect to your computer.

PINOUTS

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Pin	Name	Dir	Description
2	RXD		Receive Data
3	TXD		Transmit Data
5	GND		System Ground

3. **TEL:**
   RJ-11 connector, FXS interface is for connecting the analog phone sets or trunk line of PABX.
4. **LINE:**
   RJ-11 connector, FXO interface is for connecting the extension line of PABX or PSTN Line.
5. **12V DC:**
   Input AC 100V~120V;output DC12V.

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2. How to Setup and Connect basically

2.1 System Requirement

1. One PC (a) Pentium 100 or above, 64 RAM, Windows 98 or above.
   (b) Ethernet card or COM port
2. One standard straightforward RS-232 cable (female connector to Gateway side).
3. Analog telephone sets.
4. PBX extension Lines or PSTN Lines.
5. Software tools (a) Hyper Terminal, TELNET, Web Browser.
   (b) Gatekeeper (optional).

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2.2 IP Environment Setting

User must prepare a valid IP address, complied with IP Network, for Gateway's proper operation.

For testing the validation of chosen IP address, using the same IP configuration in other PC or Notebook, and then try to connect to Public Internet (go to well-known website, receive Internet mail, or ping a specific public IP address). If it works, use the same IP address and network configuration for Gateway.
Please follow up the step for the configuration of your computer or notebook.

2.2.1 For Windows 2000/NT

Please make sure that the network interface of your computer is working fine and the cross over line (RJ-45) is connecting with the computer correctly or you could use a hub to connect with your computer and this gateway. Turn on your computer and configure the network parameter as follow:

1 Go to the **start** menu and enter the **setting** area. Click **control panel**.

2 Enter the network configuration.

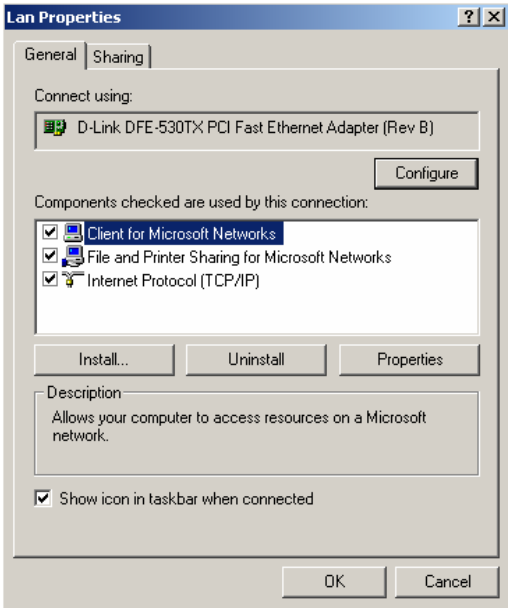

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Figure 2.1: Network Configuration

3 Select the **Property** of the LAN card.

4 Setup the ip address, subnet mask and default gateway as below:

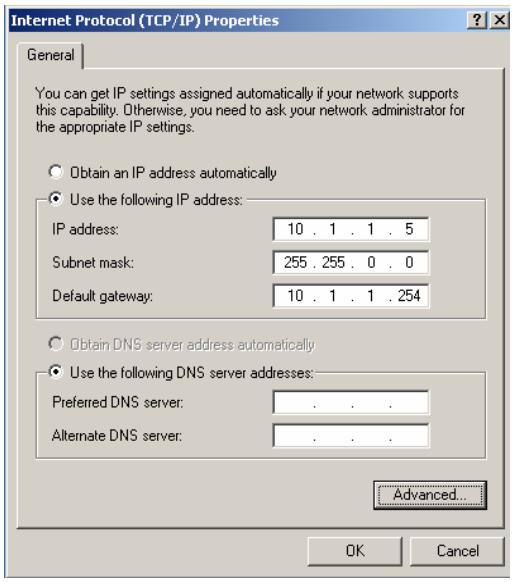
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 10 . 1 . 1 . 5
Subnet mask: 255 . 255 . 0 . 0
Default gateway: 10 . 1 . 1 . 254
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 2.2: Configure the network

5 Click OK after you finished the network setup.

The default ip address, netmask and default gateway address of the gateway is 10.1.1.3, 255.255.0.0, 10.1.1.254.

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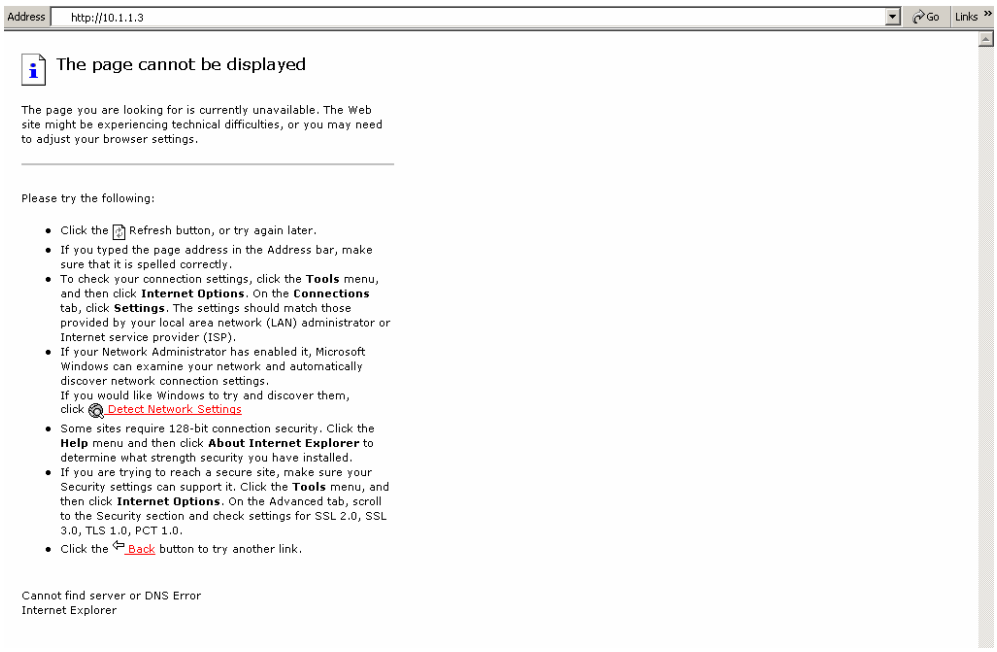
2.3 Network configurations in your gateway

1 Key in the ip address of the gateway (http://10.1.1.3) with the browser


Address
http://10.1.1.3
Go
Links
The page cannot be displayed
The page you are looking for is currently unavailable. The Web site might be experiencing technical difficulties, or you may need to adjust your browser settings.
Please try the following:
Click the Refresh button, or try again later.
If you typed the page address in the Address bar, make sure that it is spelled correctly.
To check your connection settings, click the Tools menu, and then click Internet Options. On the Connections tab, click Settings. The settings should match those provided by your local area network (LAN) administrator or Internet service provider (ISP).
If your Network Administrator has enabled it, Microsoft Windows can examine your network and automatically discover network connection settings.
If you would like Windows to try and discover them, click Detect Network Settings
Some sites require 128-bit connection security. Click the Help menu and then click About Internet Explorer to determine what strength security you have installed.
If you are trying to reach a secure site, make sure your Security settings can support it. Click the Tools menu, and then click Internet Options. On the Advanced tab, scroll to the Security section and check settings for SSL 2.0, SSL 3.0, TLS 1.0, PCT 1.0.
Click the Back button to try another link.
Cannot find server or DNS Error
Internet Explorer

2 After key in the ip address, you have to enter the user name and password to enter the WEB configuration. (Username: root ; No password)

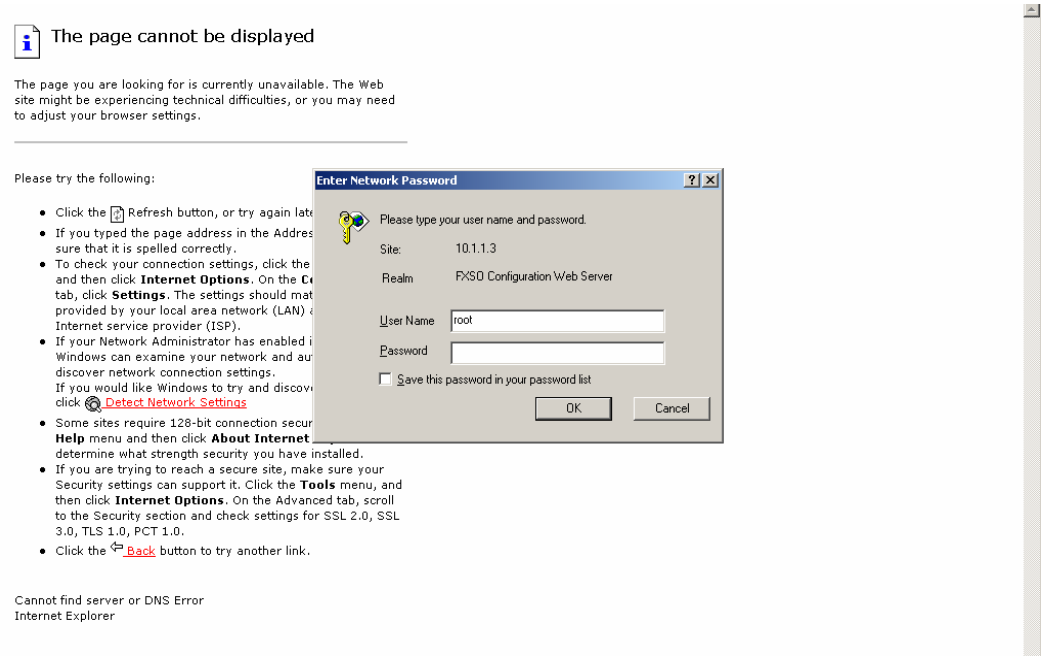

The page cannot be displayed
The page you are looking for is currently unavailable. The Web site might be experiencing technical difficulties, or you may need to adjust your browser settings.
Please try the following:
Enter Network Password
Please type your user name and password.
Site: 10.1.1.3
Realm FXSO Configuration Web Server
User Name root
Password
Save this password in your password list
OK
Cancel
Cannot find server or DNS Error
Internet Explorer

Figure 2.3: Login the username and password

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3 You will enter the main page of the configuration after key in the login name and password correctly:

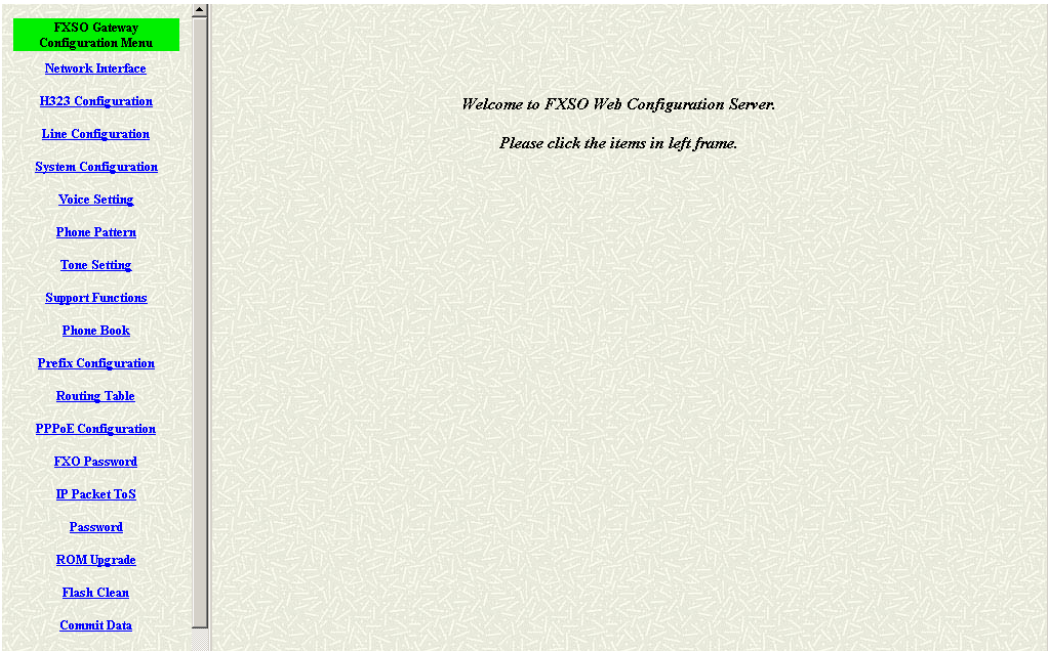

Figure 2.4: The main WEB configuration

4 Press the **Network Interface** to configure the networking of your gateway:

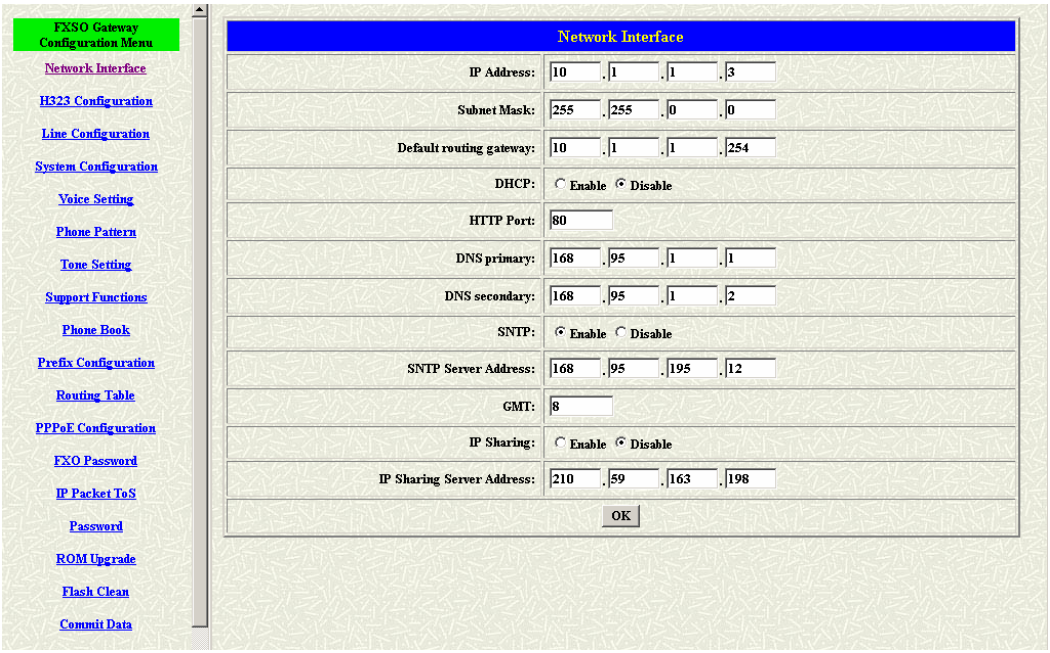

Figure 2.5: The Network Interface

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2.3.1 Static ip address

1 Please get the correct ip address, netmask and default gateway address from your ISP first. Press the OK button if you finished.

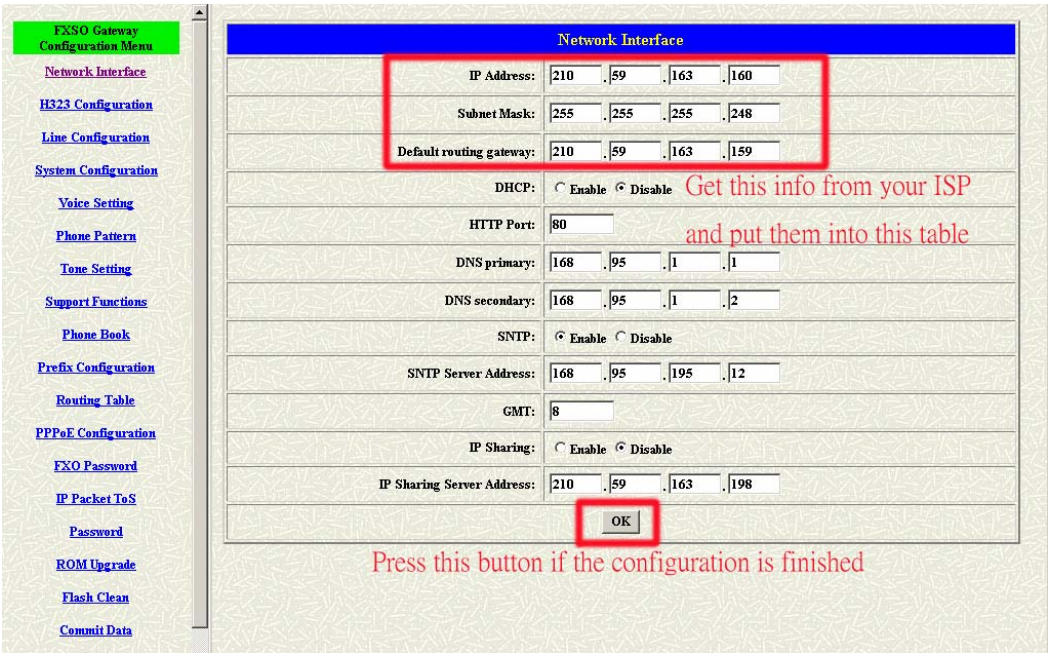
FXSO Gateway Configuration Menu
Network Interface
H323 Configuration
Line Configuration
System Configuration
Voice Setting
Phone Pattern
Tone Setting
Support Functions
Phone Book
Prefix Configuration
Routing Table
PPPoE Configuration
FXO Password
IP Packet ToS
Password
ROM Upgrade
Flash Clean
Commit Data
Network Interface
IP Address: 210 . 59 . 163 . 160
Subnet Mask: 255 . 255 . 255 . 248
Default routing gateway: 210 . 59 . 163 . 159
DHCP: Enable Disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: Enable Disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: Enable Disable
IP Sharing Server Address: 210 . 59 . 163 . 198
OK
Get this info from your ISP
and put them into this table
Press this button if the configuration is finished

Figure 2.5: Configure the static ip address

2 Press the commit if you finish the configuration.

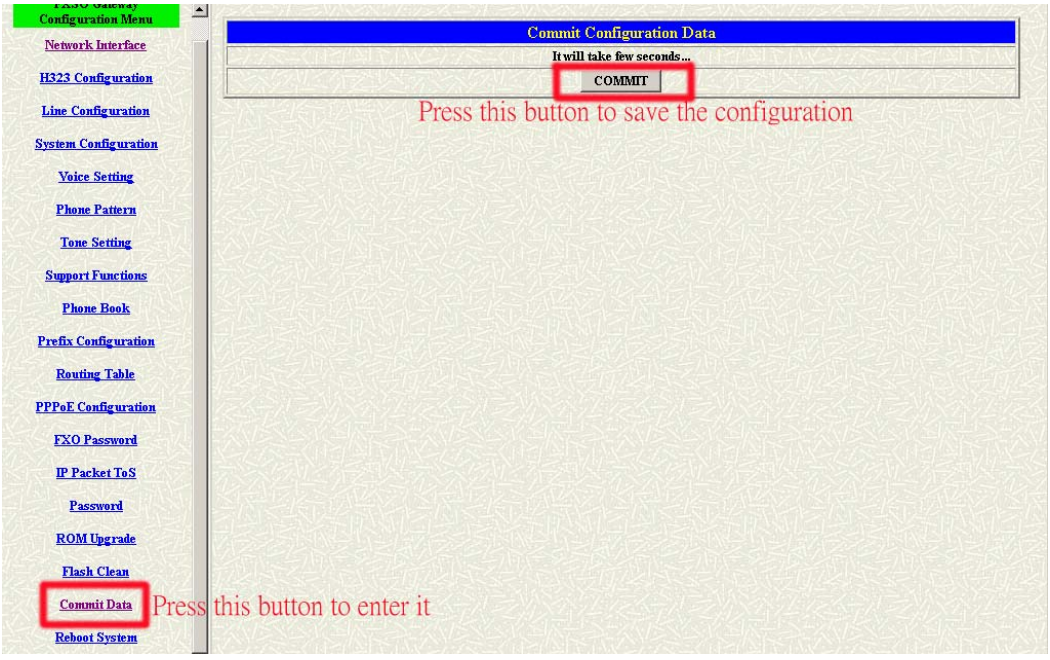

Figure 2.6: Commit the data

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3 Press the reboot if you want the configuration executed.

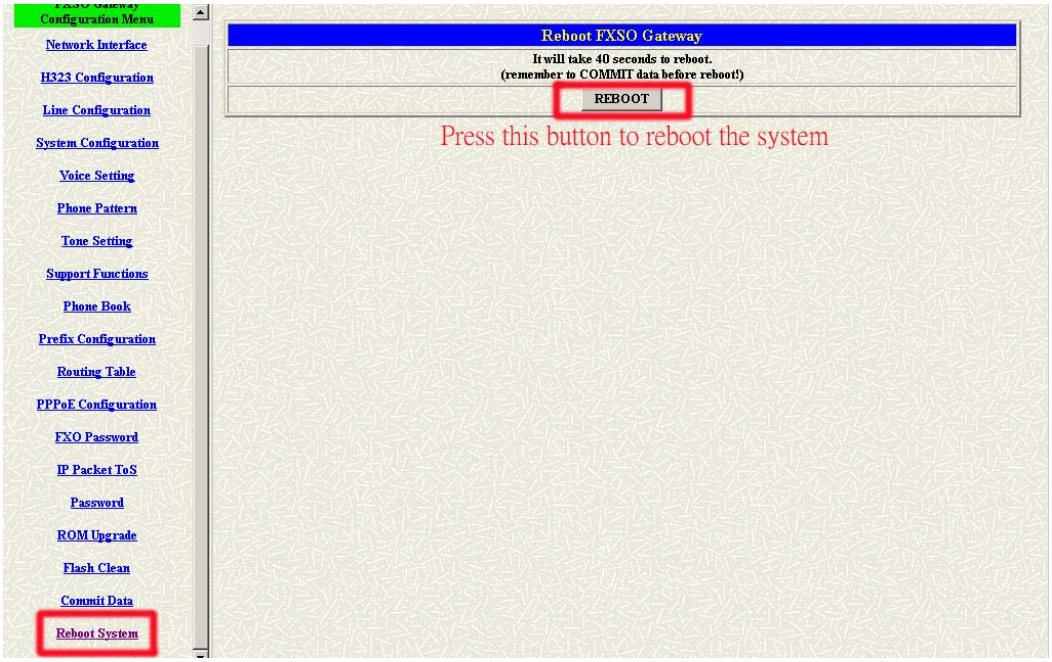

Figure 2.7: Reboot the system

2.3.2 DHCP mode

1 Enable the DHCP if you are using the cable modem or DHCP server.

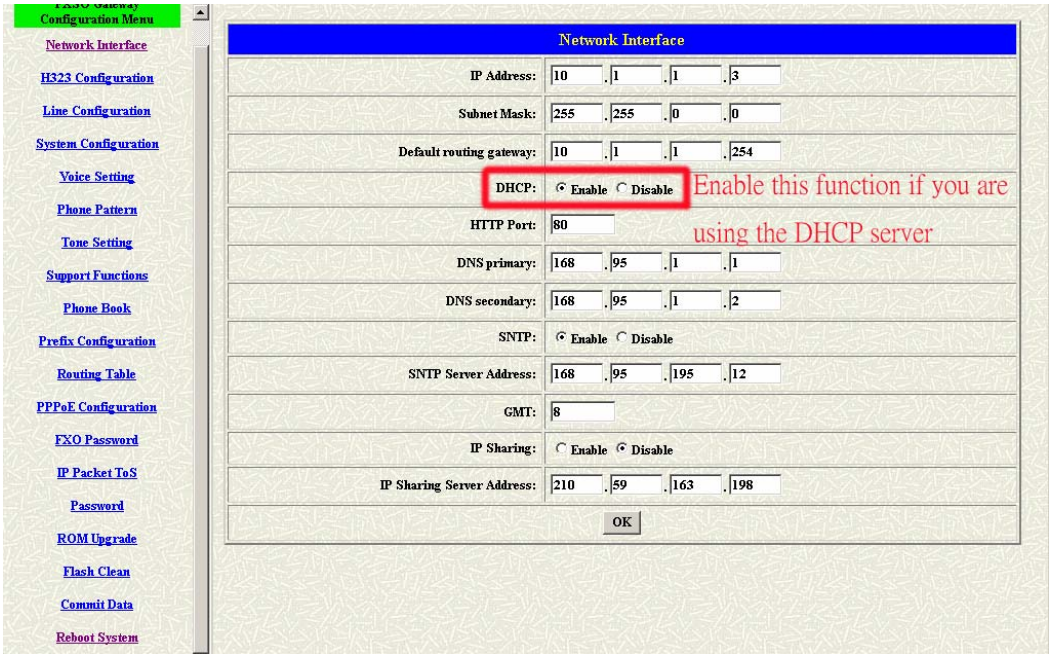

Figure 2.8: Enable the DHCP function

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2 Please commit the data and reboot the machine after you enable the DHCP function.

2.3.3 PPPoE mode

1 Press the PPPoE Configuration and put the info of the PPPoE account and password in the configuration table.

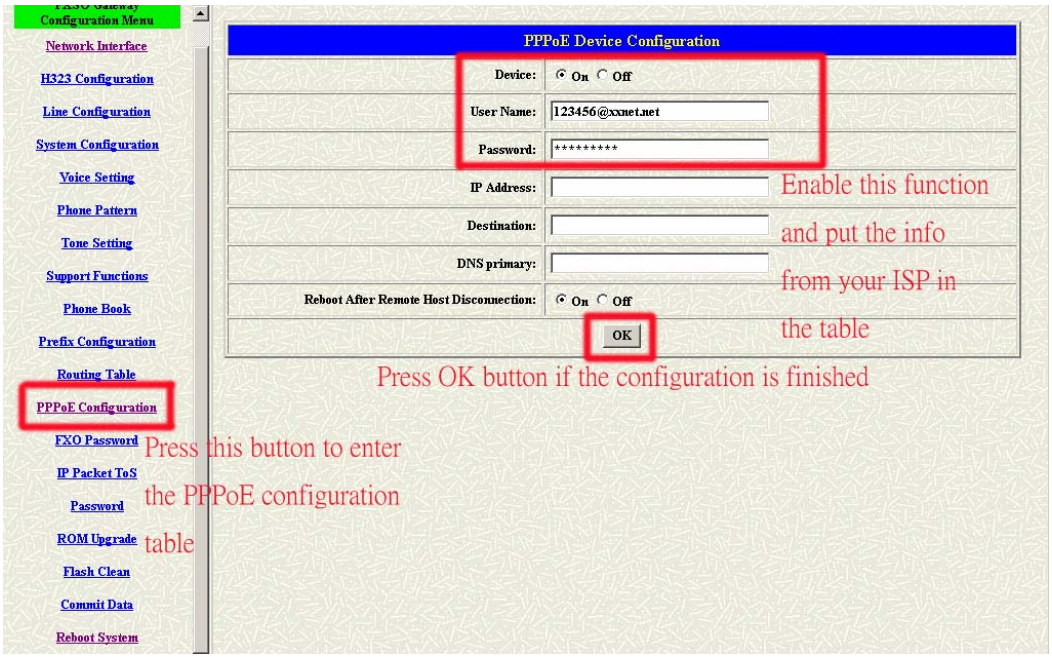

Figure 2.9: Configure the PPPoE function

2 Please commit the data and reboot the machine after you finished the configuration of PPPoE.

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2.4 Making a VoIP Call

There are two modes that you could configure the gateway for making VoIP calls. One is the Peer-to-Peer mode, another is GK routed mode. The configurations and functions are different. Please make sure about the mode you want and follow up the step to configure your gateway.

2.4.1 Configure the gateway into the Peer-to-Peer mode

1 Enter the H323 Configuration table and change the mode to Peer-to-Peer.

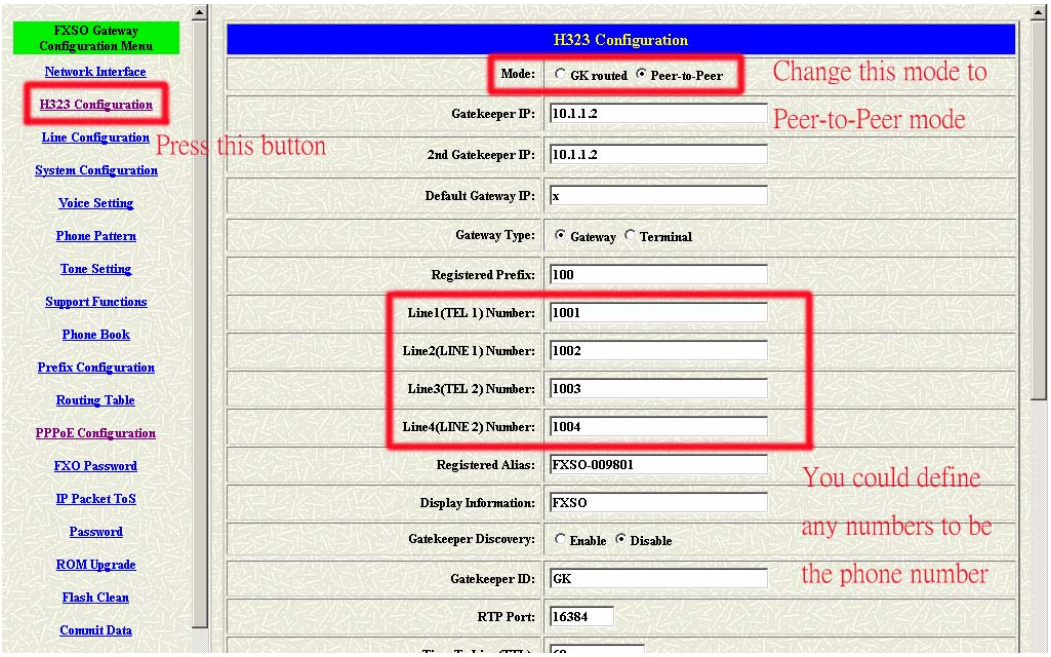

Figure 2.10: Configure the Peer-to-Peer mode

2 Press the OK button which is on the buttom of this page to save the configuration.

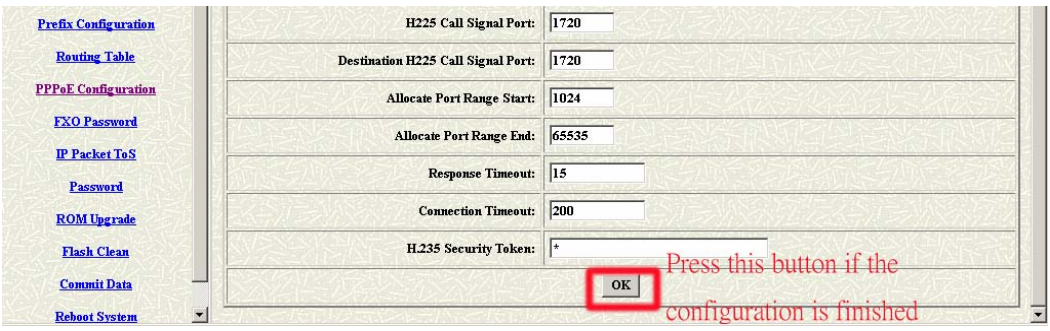

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Figure 2.11: Press OK to save the data

3 Enter the Phone Book configuration table and configure the name, ip address and phone number of the destination.

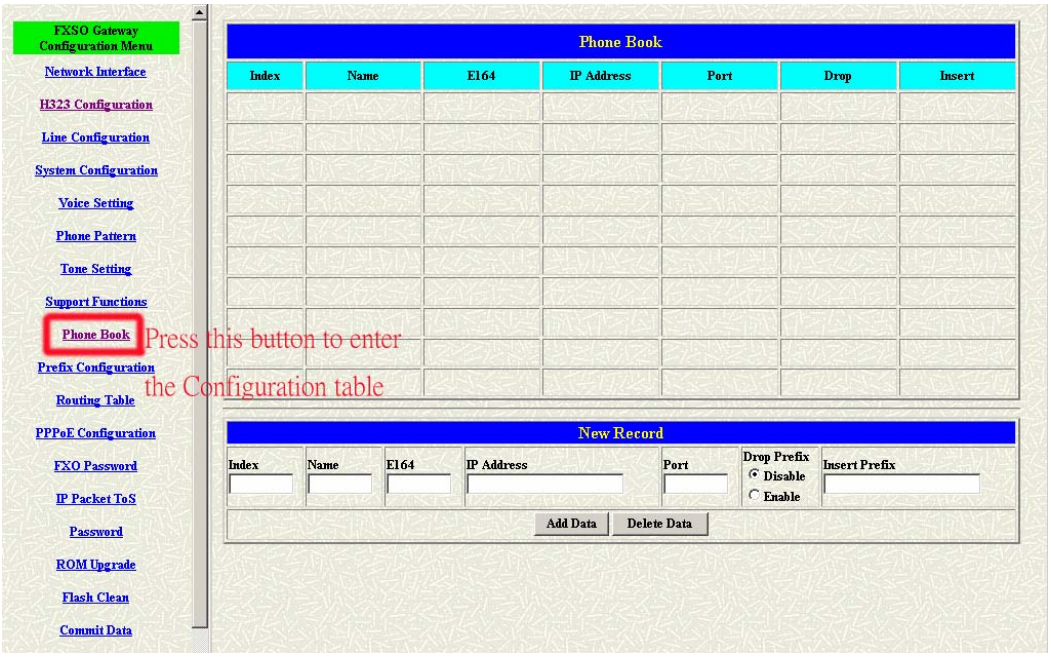

Figure 2.12: Phone Book

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【Example】

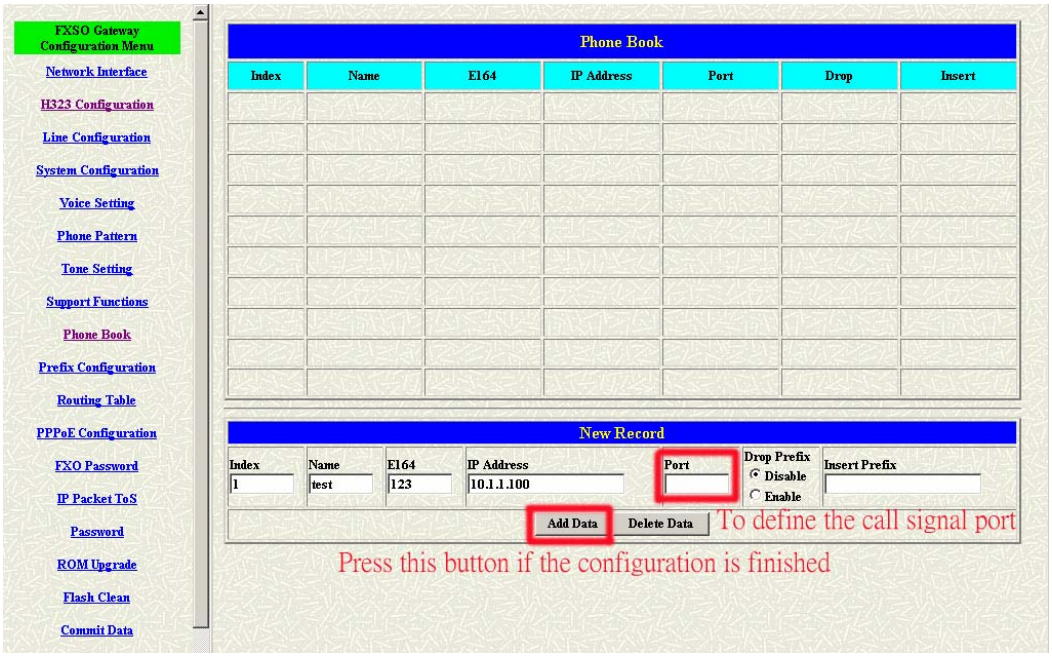

Figure 2.13: The example of Phone Book configuration

The name of the destination: **test**
The E164 number (phone number) of the destination: **123**
The ip address of the destination: **10.1.1.100**
The call signal port of the destination: **1720**
(The port will be 1720 if you don' t define it)
Drop prefix: **Enable – The e164 number you define will be deleted**
Disable – The e164 number you define will be kept
Insert prefix: **To add a number you define in this table**

Press the "Add Data" button when you finished, and the new table will display on the first index if you press the Phone Book configuration button.

4 Please Commit it and Reboot the system if the configuration is finished.

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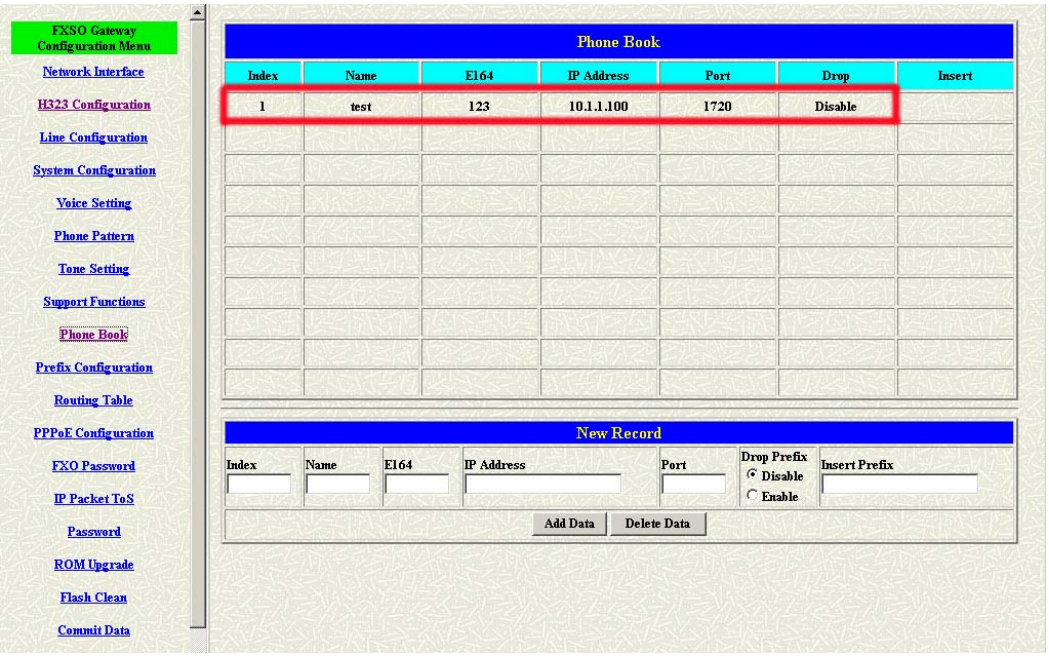

Figure 2.14: To show the Phone Book record

Phone Book is only for the Peer-to-Peer mode.
Fifty index support.

【The application in the drop and insert function】

Input (E164)	Drop	Insert	Output
100	Disable	X	100
200	Disable	0	0200
300	Enable	X	X
400	Enable	500	500

※ X – Do not enter any numbers

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2.4.2 Configure the gateway into the GK routed mode

1 Enter the H323 Configuration table and change the mode from Peer-to-Peer to GK routed. To change the GK information from your service provider (Ex: The Gatekeeper IP, Registered Prefix and Registered Alias).

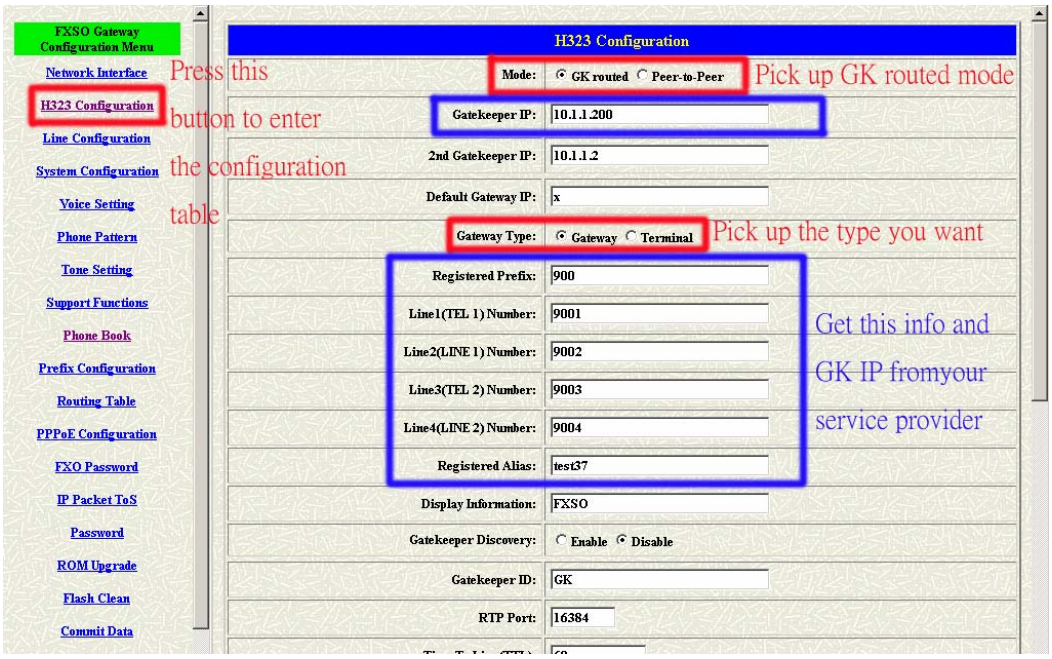

Figure 2.15: Configure the GK info

2 Press the OK button which is on the buttom of this page to save the configuration.

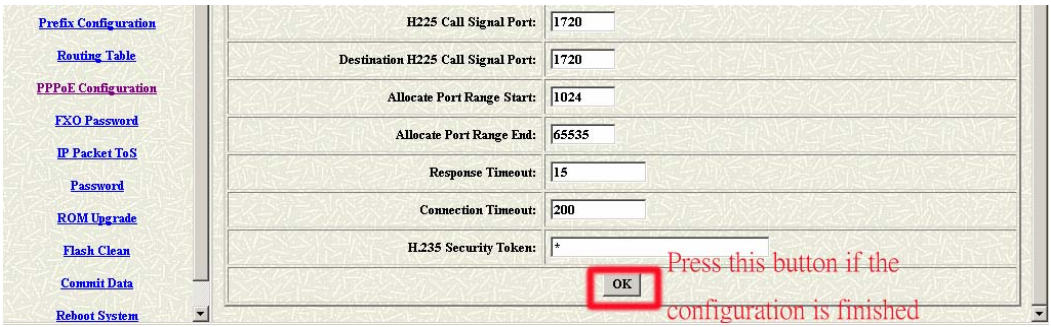

Figure 2.16: Press OK to save the data

3 Press the Commit Data and Reboot System buttons when you finished the configuration.

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2.4.2.1 The type in GK routed mode

There are two types in the GK routed mode you could choose. One is Gateway type and another is Terminal type. There are some different functions, applications and configurations between the Gateway type and Terminal type. Please get more info from the table as below:

Gateway Type	Terminal Type
Prefix number is necessary	**Prefix number is not necessary**
The E164 number of each port should be follow the prefix number	**The E164 number of each port could be different**
Support the one-stage dialing	**Do not support the one-stage dialing**

The default type of the all series gateway are Gateway type. But the LanPhone is the terminal type. You could change the type for your gateway but the LanPhone couldn't.
Please pick up the type you want to use with your gateway and pay more attentions about the rules as above.
There are two example for the Gateway type and Terminal type as below:

【Example – Gateway type】

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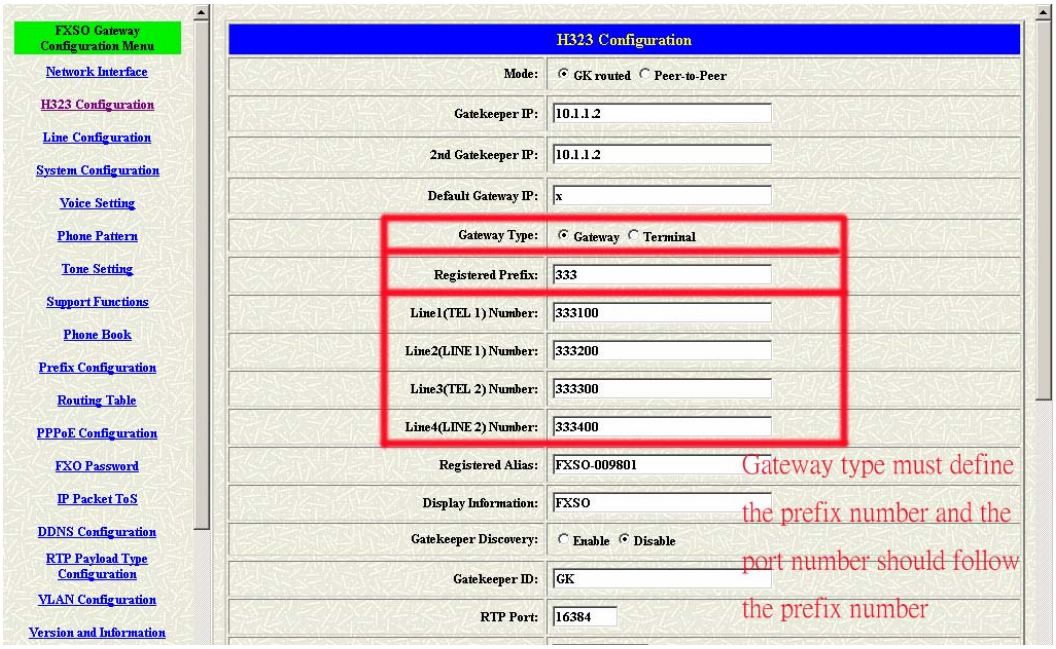

Figure 2.17: Gateway Type configuration

The prefix number is necessary if you configure it to be a gateway. The number of ports must be followed the prefix number.

【Example – Terminal type】

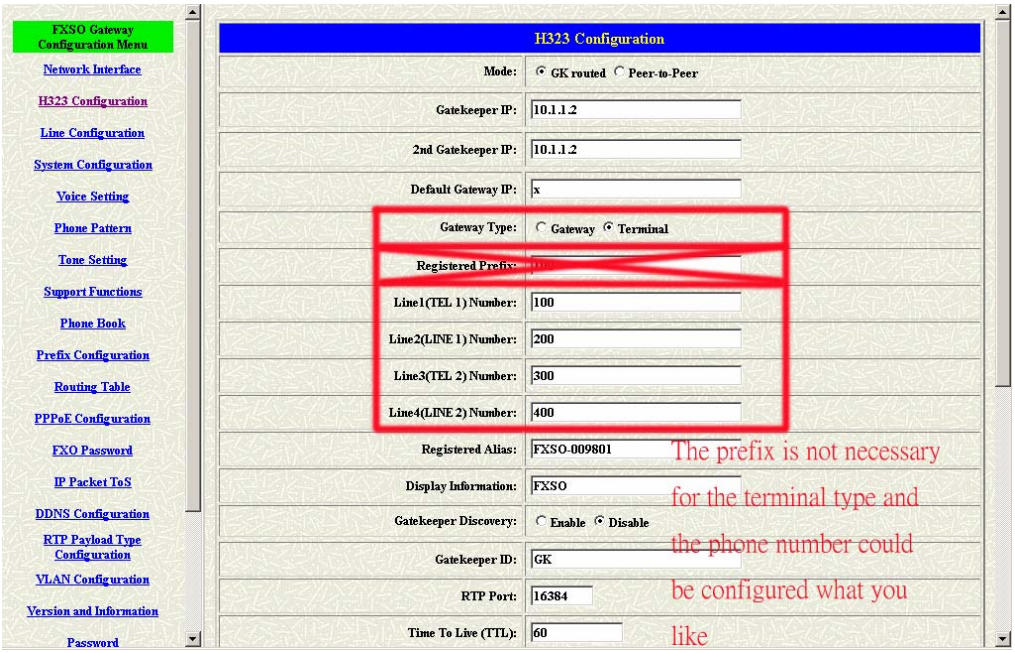

Figure 2.18: Terminal Type configuration

The prefix number is only for the gateway type and the number of ports could be configured in the different numbers.

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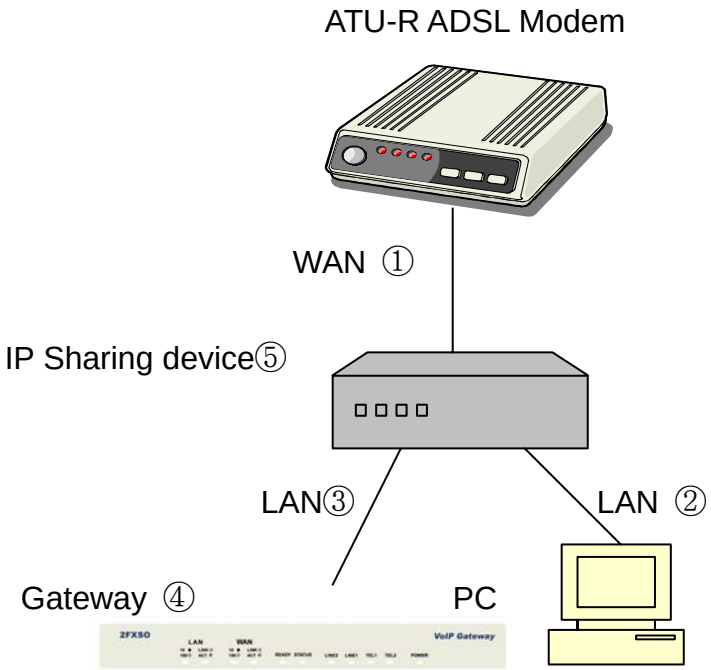
3. Advanced

There are too many advanced commands for the advanced users. The following chapters are based on the application layer. Please get the info what you need. If you need the command, please watching the chapter of Command Line Interface.

3.1 IP Sharing

The function is only for the user who is using the IP Sharing device. It is said Gateway is connected to the IP Sharing device.
The IP Sharing Device must support the DMZ or Virtual server functions
An example such as ADSL network is in the following.



- The WAN IP Address obtained from ADSL has two kinds of methods.
  One is fixed IP Address, while user applies for one or more fixed IP Addresses.
  Another is dynamic IP Address while user applies for dial-up connection way.

- The LAN IP Address of User's PC can be set as DHCP client in order to gain a valid one.

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- Another IP Address for Gateway must be set as an fixed one in order for that IP Sharing device pass forwarding the relevant information from WAN to LAN. Besides, a valid IP Address meets the IP Sharing device (LAN site) is the element.

- Please configure your gateway just like below:

1 Enter the IP address, Netmask and the default gateway in the network table.

Please follow up your IP Sharing device.

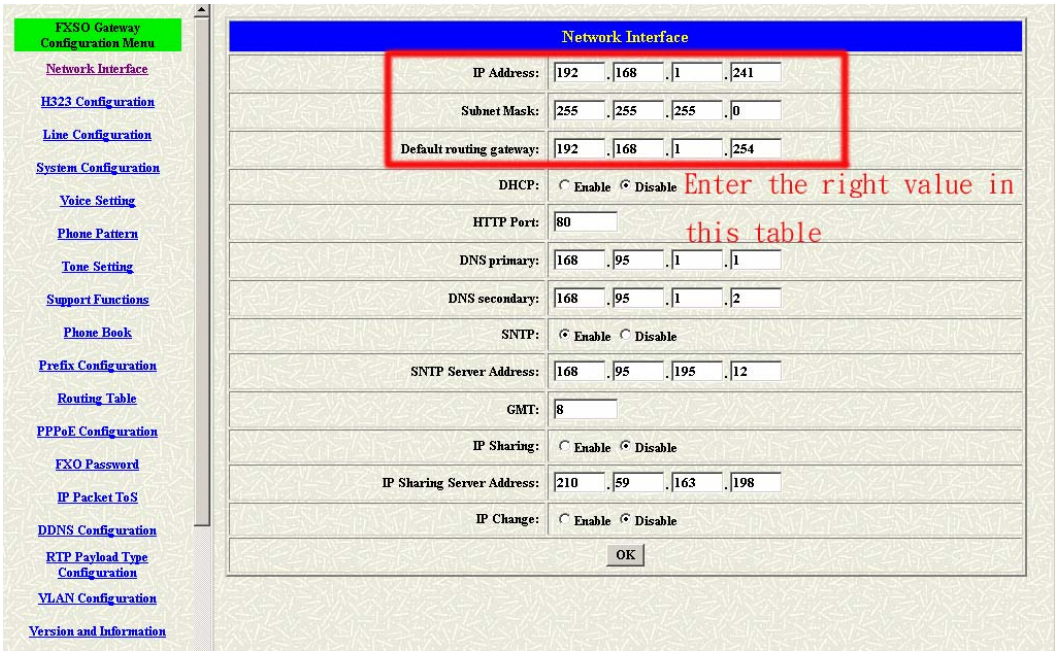
FXSO Gateway Configuration Menu
Network Interface
H323 Configuration
Line Configuration
System Configuration
Voice Setting
Phone Pattern
Tone Setting
Support Functions
Phone Book
Prefix Configuration
Routing Table
PPPoE Configuration
FXO Password
IP Packet ToS
DDNS Configuration
RTP Payload Type Configuration
VLAN Configuration
Version and Information
Network Interface
IP Address: 192 . 168 . 1 . 241
Subnet Mask: 255 . 255 . 255 . 0
Default routing gateway: 192 . 168 . 1 . 254
DHCP: Enable Disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: Enable Disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: Enable Disable
IP Sharing Server Address: 210 . 59 . 163 . 198
IP Change: Enable Disable
OK
Enter the right value in this table

Figure 3.1: Network configuration

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2 Enable the ip sharing function and put the static ip address in the server address table.

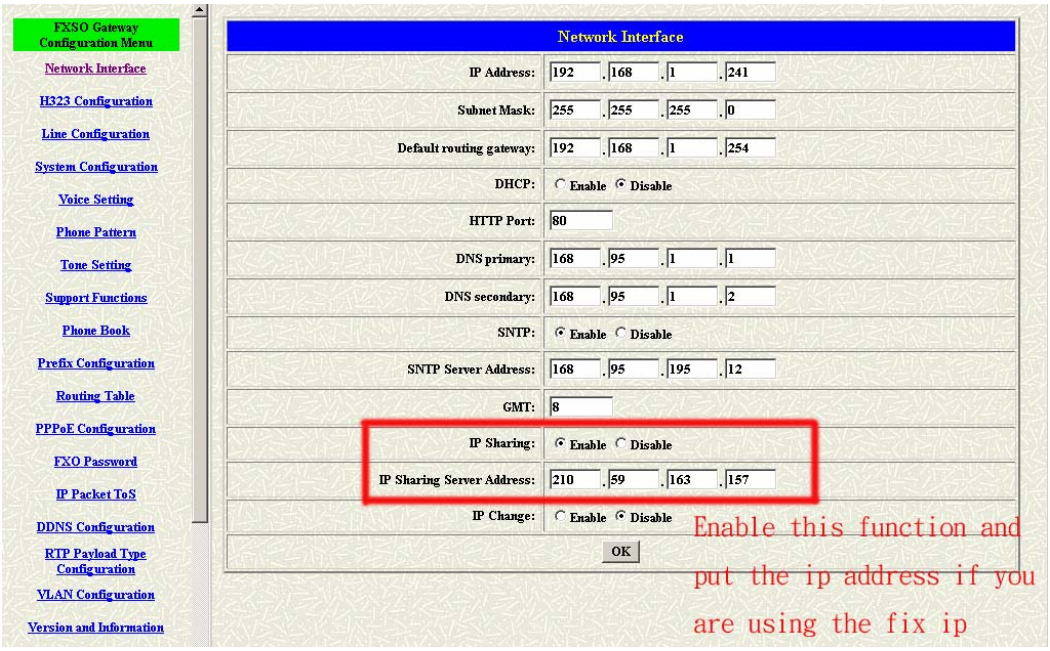
FXSO Gateway Configuration Menu
Network Interface
H323 Configuration
Line Configuration
System Configuration
Voice Setting
Phone Pattern
Tone Setting
Support Functions
Phone Book
Prefix Configuration
Routing Table
PPPoE Configuration
FXO Password
IP Packet ToS
DDNS Configuration
RTP Payload Type Configuration
VLAN Configuration
Version and Information
Network Interface
IP Address: 192 . 168 . 1 . 241
Subnet Mask: 255 . 255 . 255 . 0
Default routing gateway: 192 . 168 . 1 . 254
DHCP: Enable Disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: Enable Disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: Enable Disable
IP Sharing Server Address: 210 . 59 . 163 . 157
IP Change: Enable Disable
OK
Enable this function and put the ip address if you are using the fix ip

Figure 3.2: Enable the ip sharing function

1. Fixed IP – Please put the ip address of the ip sharing device in the IP Sharing Server Address table.
2. Dynamic IP – Just leave it if the IP sharing device is using PPPoE or DHCP protocol to connect with the internet.

3 The IP change function is only for the special usage

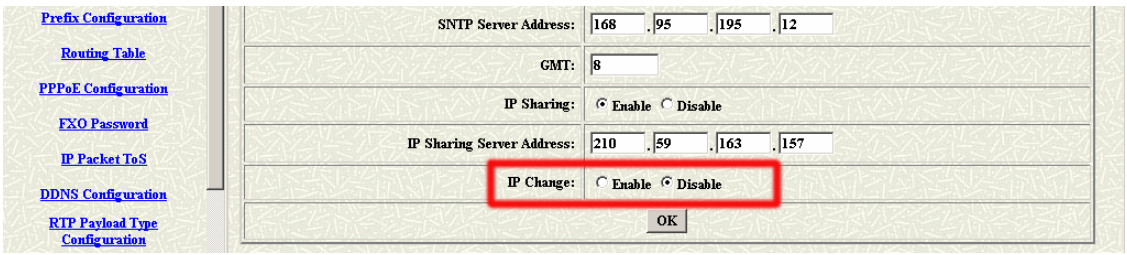

Figure 3.3: IP Change

- IP Change Function: Some IP Sharing device could support two fixed ip address for the WAN port and the DMZ. That's meaning the DMZ is using a different ip address from the WAN port of the IP Sharing device. Please

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enable this function if the IP Sharing device could support this two different ip address for the DMZ device and WAN port. If you don't need it, just follow the default setting.

4 Please Commit it and Reboot the system if the configuration is finished.

This chapter is focus on the DMZ function of the IP Sharing Device, Please get another application from our web site.

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3.2 Line

The Line configuration will show the status of the registrations and the ports. It includes the hunt group, hotline, and no answer forward configuration. Press the Line configuration button to enter configuration table (see figure 3.14)

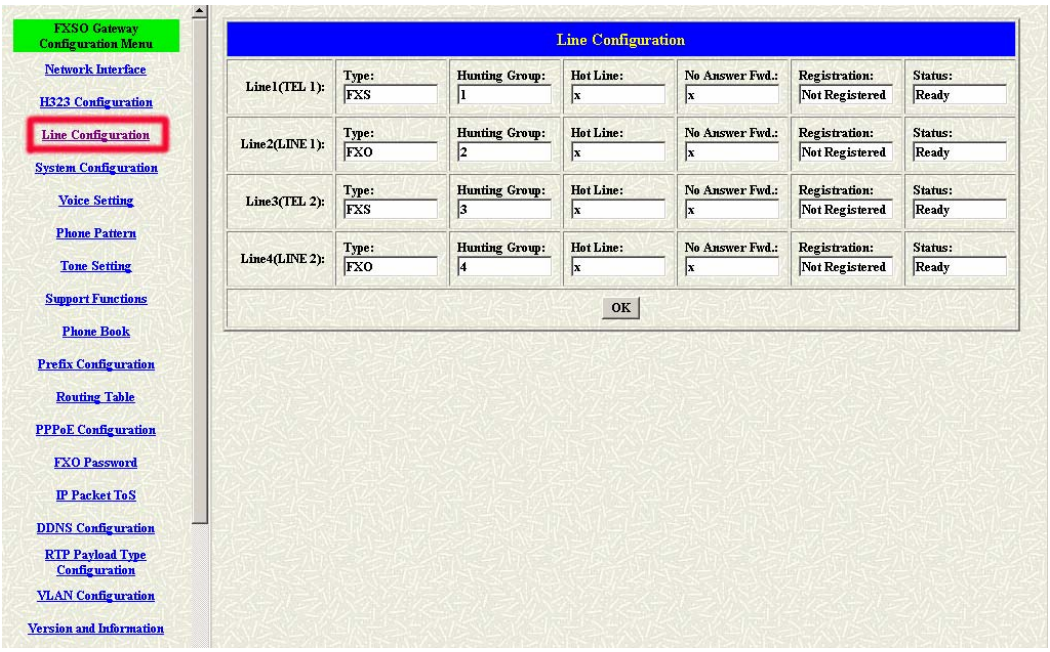
FXSO Gateway Configuration Menu
Network Interface
H323 Configuration
Line Configuration
System Configuration
Voice Setting
Phone Pattern
Tone Setting
Support Functions
Phone Book
Prefix Configuration
Routing Table
PPPoE Configuration
FXO Password
IP Packet ToS
DDNS Configuration
RTP Payload Type Configuration
VLAN Configuration
Version and Information
Line Configuration
Line1(TEL 1): Type: FXS Hunting Group: 1 Hot Line: x No Answer Fwd.: x Registration: Not Registered Status: Ready
Line2(LINE 1): Type: FXO Hunting Group: 2 Hot Line: x No Answer Fwd.: x Registration: Not Registered Status: Ready
Line3(TEL 2): Type: FXS Hunting Group: 3 Hot Line: x No Answer Fwd.: x Registration: Not Registered Status: Ready
Line4(LINE 2): Type: FXO Hunting Group: 4 Hot Line: x No Answer Fwd.: x Registration: Not Registered Status: Ready
OK

Figure 3.4: Line Configuration

- Type – Show the type of this port. There are only two types of this gateway. One is FXS type another is FXO type. It couldn't be changed.
- Hunting Group – Define the group number of this port. When the port is busy, the call could be transferred to another port in the same group.
- Hotline – Enable or Disable the hotline mode. The hotline mode will be enabled if you enter the hotline number. The default setting is disabled.
- No Answer Forward – When the port didn't answer the call, this call will be forwarded to the number you configured. This is only for the E164 number or the phone number you want to transfer.

This function should be used with the forwardtime command (in the System configuration table). The range of the forward time is 5 to 65535. If the function is enable, the No Answer forward number is 123, and the forward time is 5 seconds. The call will be forwarded to the destination with 123 numbers when the origin port didn't answer the call.

- Registration – To show the gateway registered on the GK or not.

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- Status – To show the port is busy or ready.

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3.3 Gateway Prefix

The prefix number is necessary if the type of gateway is gateway type. The type of gateway is for the GK mode only. The Gateway Prefix function is only support the gateway which is the destination. Please enter the WEB configuration of this function if you want to configure it (see figure 3.5)

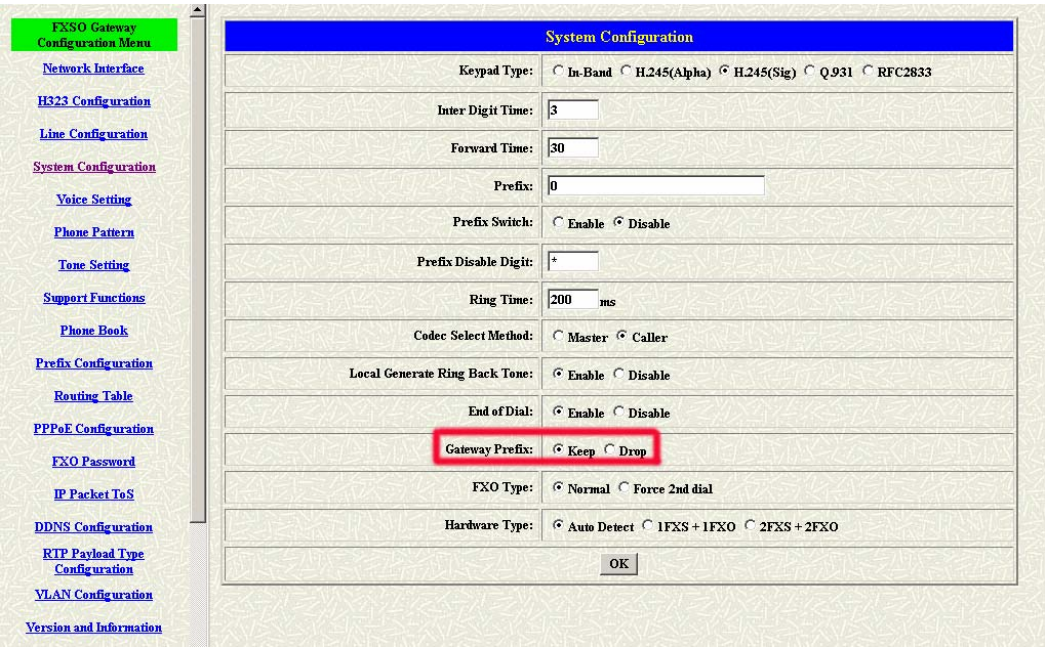

Figure 3.5: Gateway Prefix

The gateway could keep or drop the prefix number if the call is coming from the ip side and bring the prefix number of this gateway. The usage of this command is about the one-stage-dialing function. Of course it must work with the Routing table. Please get the info about the Routing table configuration in the chapter 3.

Source	Gateway Prefix	Receive	Transfer
10012345	Keep	10012345	10012345
10012345	Drop	10012345	12345

If the incoming call (From IP side) with the number is 10012345, and the prefix number of the destination gateway is 100. The gateway will receive 10012345. But the number it transfer will be 10012345 (Gateway Prefix Keep). The transfer number will be 12345 if the Gateway Prefix function is enabled.

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3.4 FXO Type

The function coerces the calls to be two-stage-dialing. It working even the Routing Table has been configured. Enter the System Configuration to configure this function (see figure 3.6)

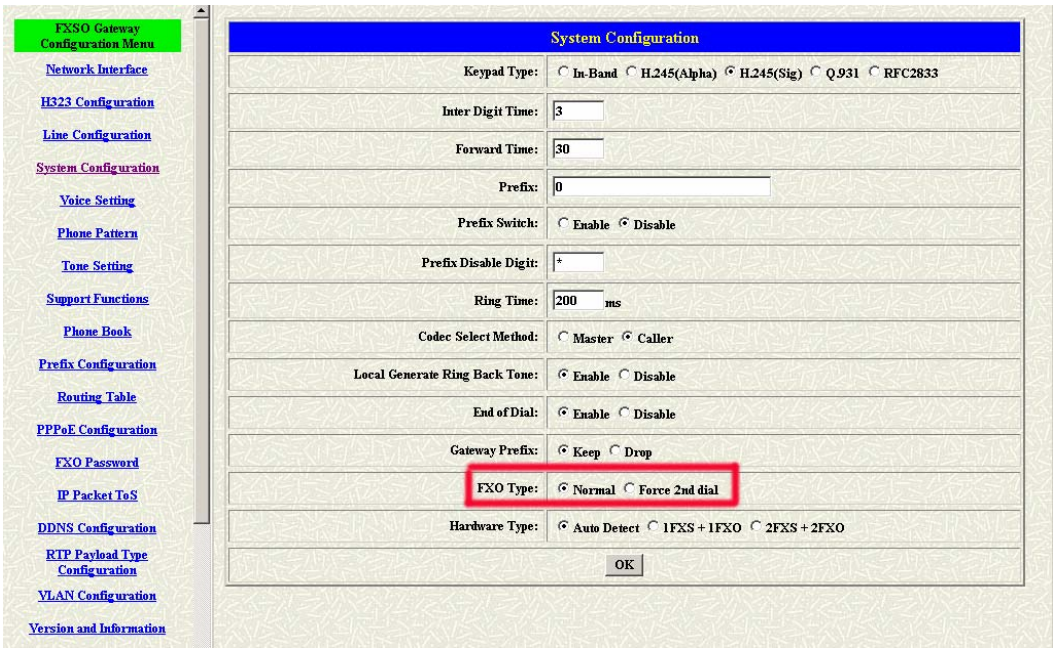

Figure 3.6: FXO Type

- Normal – Following the origin usage
- Force 2nddial – Any calls to FXO port will be the two-stage-dialing

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3.4 T.38

The T.38 is a “Real Time Group 3 Fax Communication over IP network” format. That’s meaning it’s a protocol for Fax over IP. You have to enable this function if you need the Fax issue. Press the Support button to enter the configuration table (see figure 3.7)

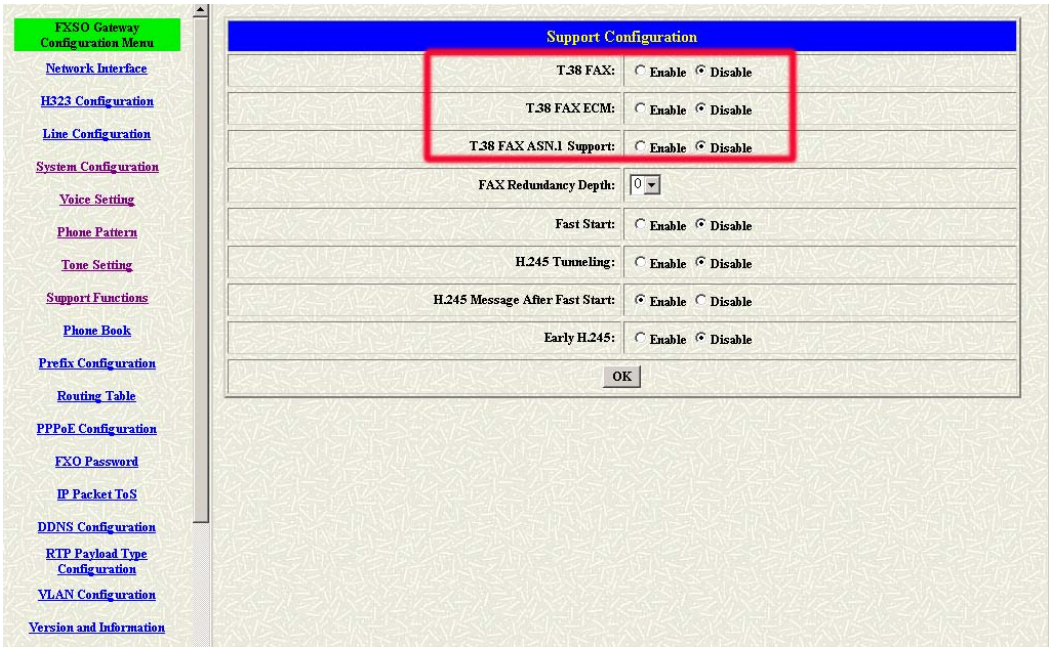

Figure 3.7: T.38 configuration

- T.38 – Enable will Support Fax function, disable won’t.
- T.38 Fax ECM – Error Correction during fax high speed Mode support.
- T.38 Fax ASN.1 Support – The transmission of voice data over packet switch networks support. Abstract Syntax Notation 1.

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3.5 Prefix

The Prefix function is only for the GK mode to drop or insert the numbers. It just likes the drop, insert function of the Phone Book. But the difference is that the Prefix is only support GK mode. Please press the Prefix Configuration button to enter the configuration web page (see figure 3.8).

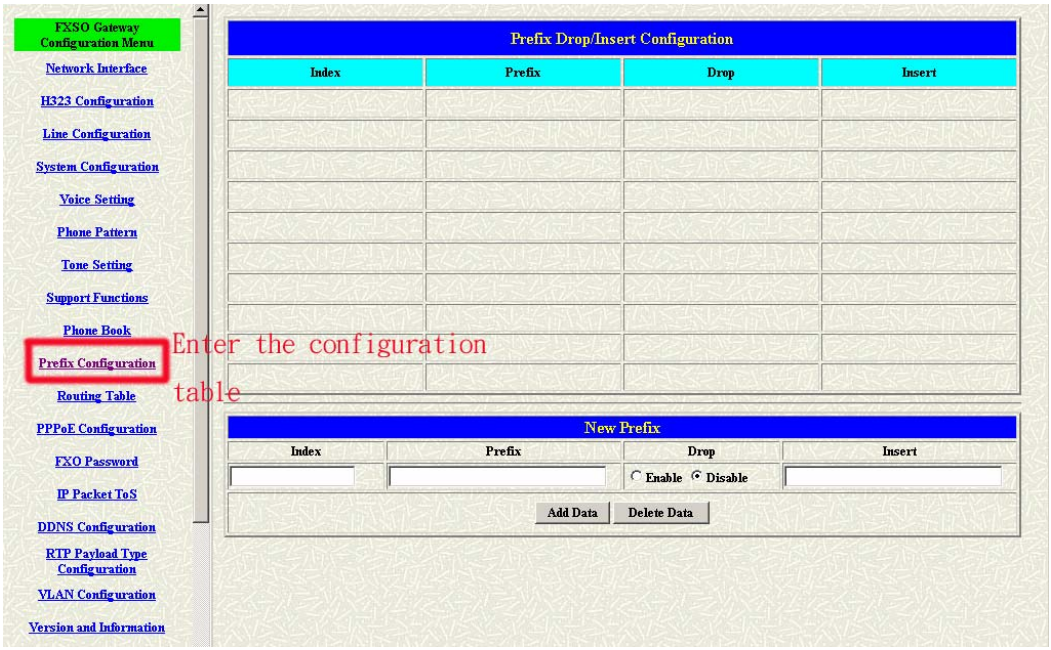

Figure 3.8: Prefix Configuration

There is a rule between Prefix and Routing command, the Prefix command have priority over the Routing command. If there is a incoming call from any sides, the Routing will check this calling number after the Prefix checked (see figure 3.)

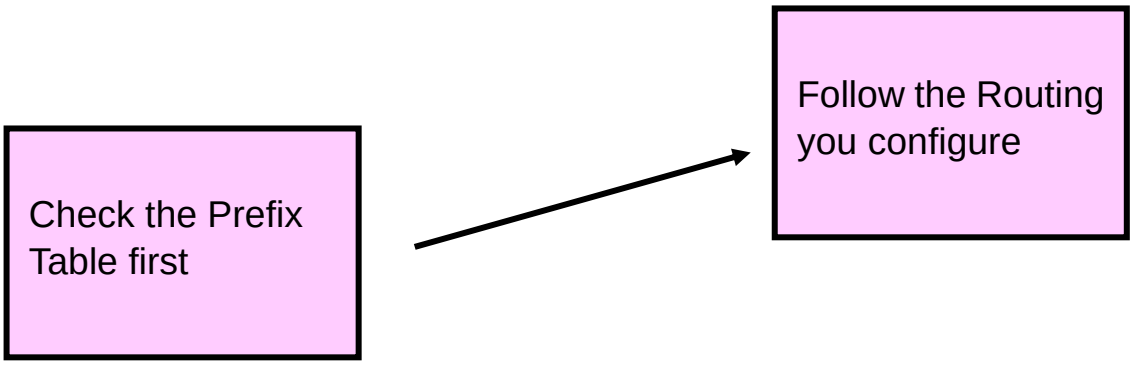

Figure 3.9: The Priority

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There is an example about the configuration, please follow up these steps.

1 Press the Prefix Configuration button to enter the configuration table (see figure 3.8)

2 Enter the index number. Put the prefix numbers you will dial in the prefix table, enable (disable) the drop function and enter the numbers you want to insert (see figure 3.10)

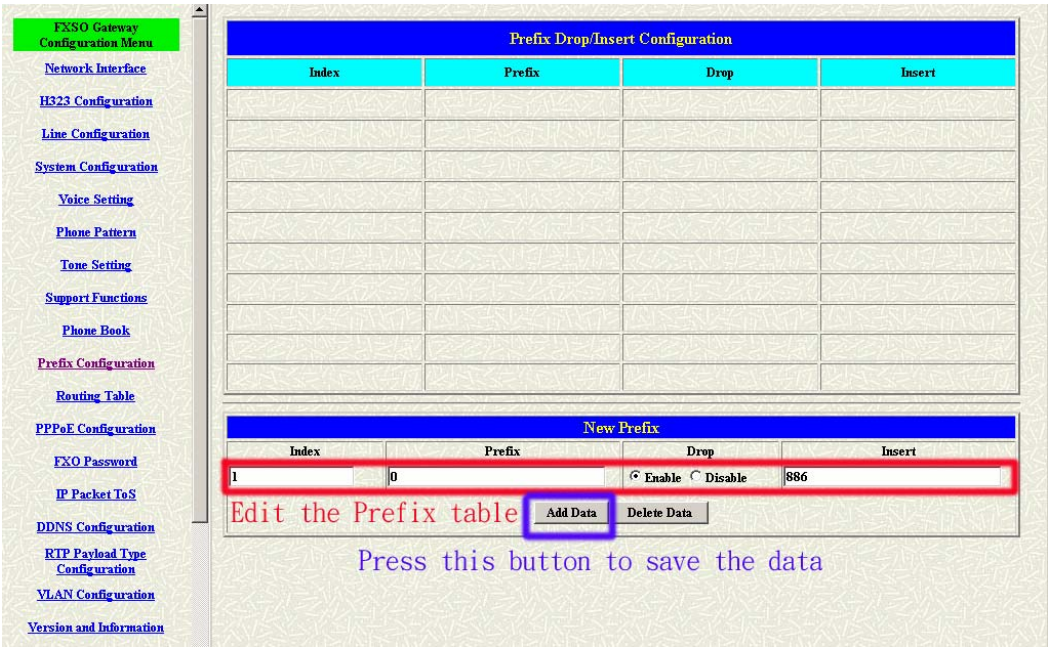

Figure 3.10: Configure the Prefix Table

The usage is as same as the drop, insert function of the Phone Book.

Input (Prefix)	Drop	Insert	Output
100	Disable	X	100
200	Disable	0	0200
300	Enable	X	X
400	Enable	500	500

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3 Press the Prefix Configuration button to reload the configuration table (see figure 3.11)

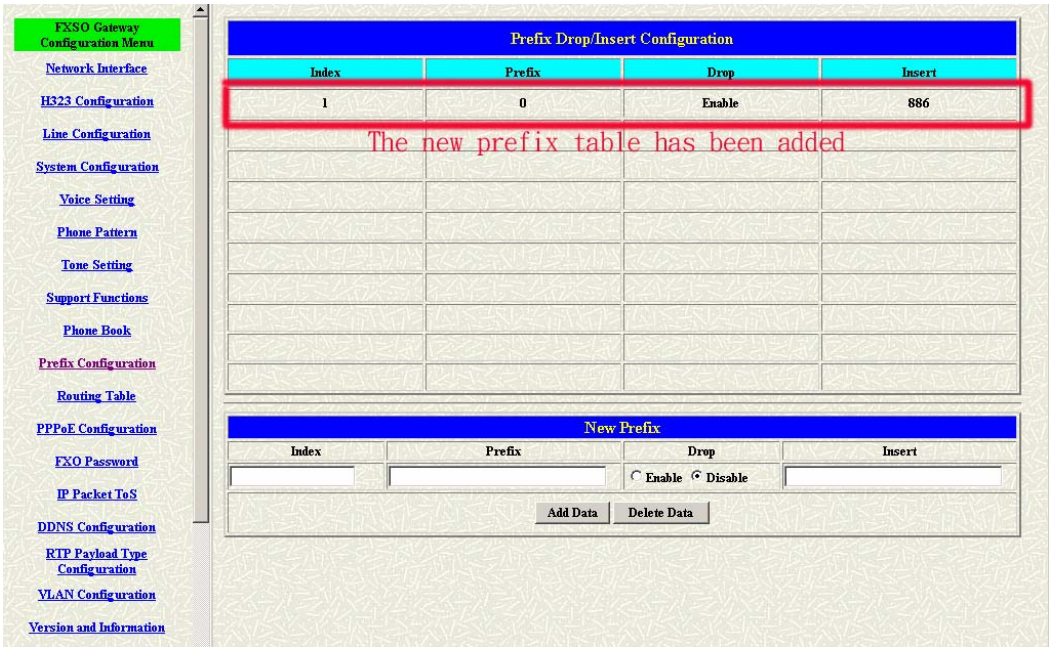

Figure 3.11: Show the added teble

4 Please Commit it and Reboot the system if the configuration is finished.

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3.6 Routing Table

Routing Table is a rule to define the destination of the calls you make. You could define the rules by the number you dial or by the ports. The Routing Table button will show you the configuration table (see figure 3.12).
In fact, there are three directions of the incoming calls (from IP, FXS and FXO side). The explanation of the default routing is as below:

The location with the incoming calls	The location with the destination	The explanation
IP (Default)	Fxs	The destination will be the FXS port when the calls from the IP side without any define rules.
Fxs (Default)	IP	The destination will be the IP side when the calls from the FXS port without any define rules.
Fxo (Default)	IP	The destination will be the IP side when the calls from the FXO port without any define rules.

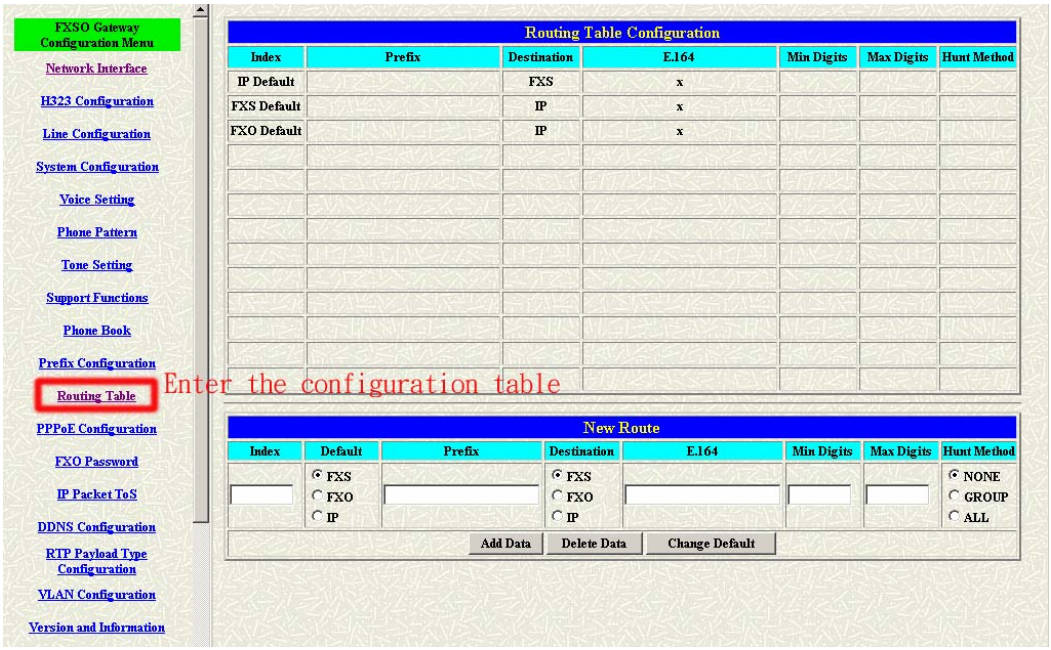

Figure 3.12: Routing Table Configuration

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3.6.1 Change the default routing

Please follow up the steps if you want to change the default routing:

1 Pick up the side for the incoming calls and define the destination of this side.

Press the Change Default to save the data.

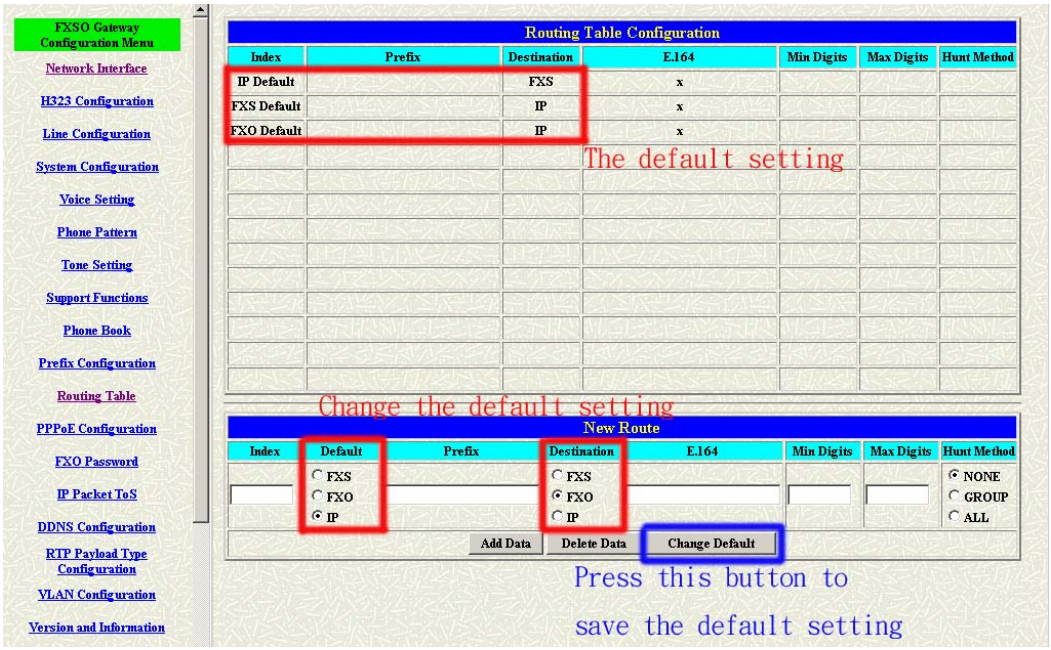

Figure 3.13: Change The Default Setting

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2 The default setting is changed after you press the Change Default button. Please press the Routing Table button again to show the new setting.

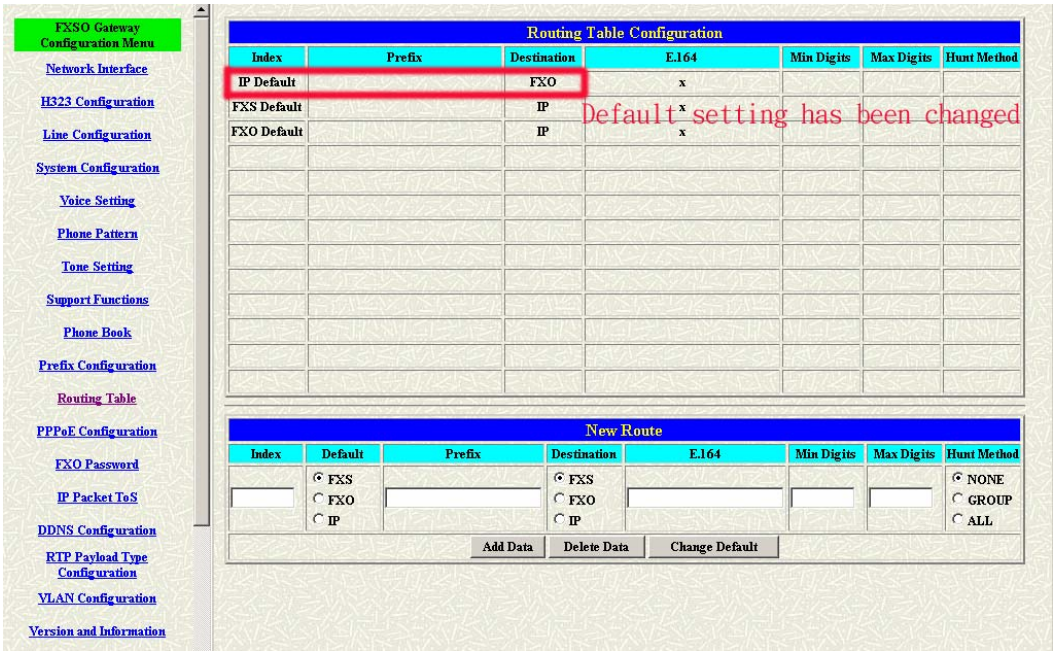

Figure 3.14: The Default Setting Changed

3 Please Commit it and Reboot the system if the configuration is finished.

3.6.2 Add a new Routing Table

1 The default setting is changed after you press the Change Default button. Please press the Routing Table button again to show the new setting.

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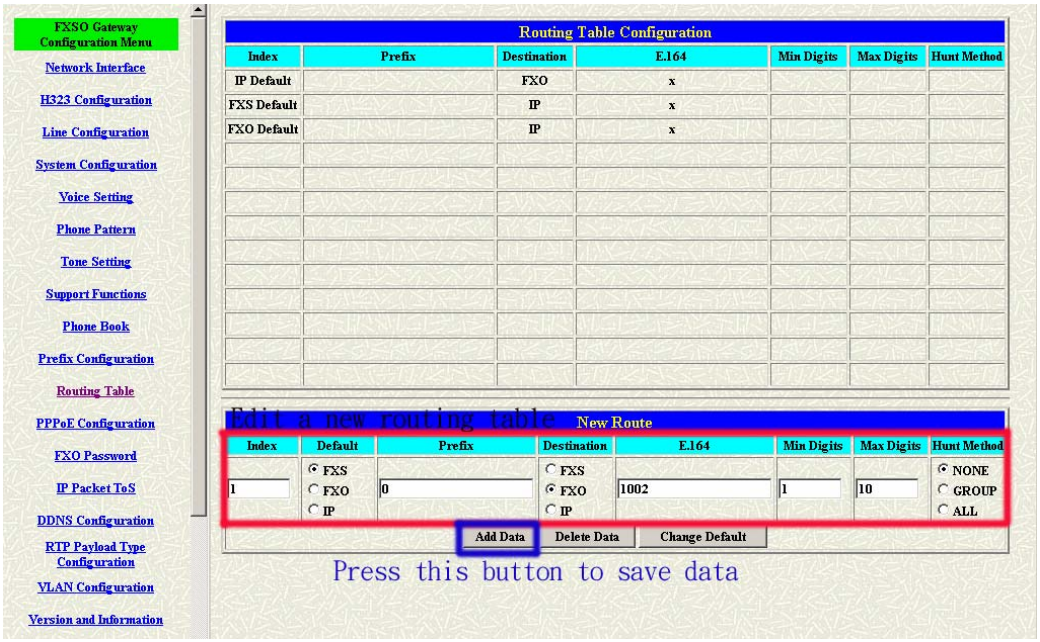

Figure 3.15: Edit and Add a new routing table

- Index – Define the number of this data.
- Prefix – Define the number you dial. You could just define the first digit of the numbers
- Destination – Define the destination of this rule. There are three directions of the destination.
- E164 – Define a right E164 number of the destination you want.

For example: There are two FXO ports of the gateway (2FXSO) and I want the first FXO port (1002 is the default E164 number) to be the destination. So the E164 number I have to define is 1002.

- Min Digits – The minima digits you dial.
- Max Digits – The maxima digits you dial.

The min and max digits are the range for the number you dial. For example: The min digits is 1 and max digits is 10. The call will follow this routing if the number I dial is between 1 and 10 digits. If I dial over 10 digits, this call will follow the default routing.

- Hunt – Define the hunt group function.

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None – Disable this function
Group – The call will search other ports to be the destination with the same group if the origin destination is busy.
All – The call will search other ports to be the destination with the same type if the origin destination is busy.

2 Press Add Data button to save the configuration and press the Routing Table button again to reload the configuration.

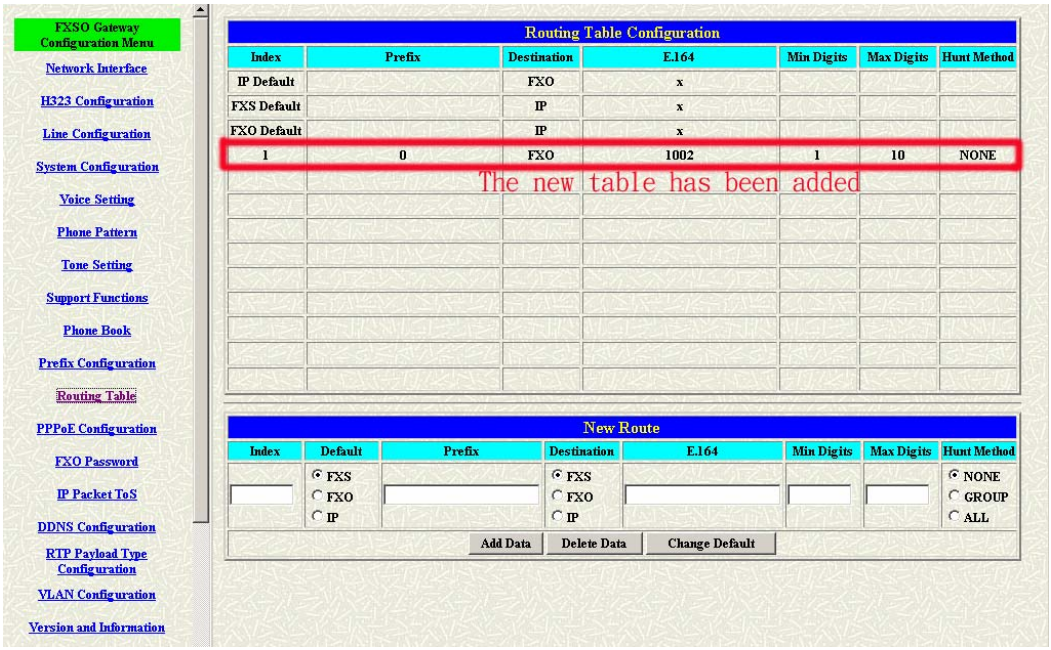

Figure 3.16: New Special Routing

The explanation of figure 3.16 is as below:

When the user dial 0 with the first digit of the numbers (from FXS side), or from FXO and IP side. And the numbers you dial is between 1 and 10 digits. If this call matches the rule, it will be transferred to the FXO port whose E164 number is 1002.

3 Please Commit it and Reboot the system if the configuration is finished.

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3.7 FXO Password

You will get the IVR if you make calls from PSTN side or from IP side. The IVR will ask you the password you set, and you could make other calls to IP side or PSTN side if the password you type is correct. Please press the FXO Password button to configure the password (see figure 3.17)

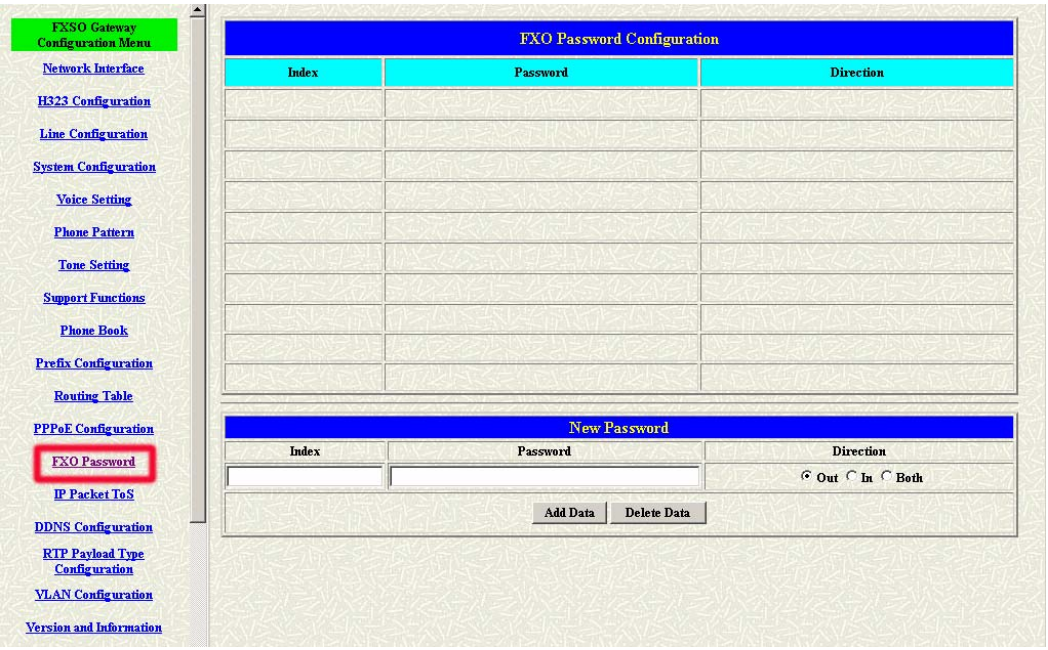

Figure 3.17: FXO Password

- Index – The number of this table.
- Password – The password you set.
- Direction – Playing the IVR to PSTN, IP or both side.
  (Out – To IP side ; In – To PSTN side)

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3.8 DDNS Configuration

This version of firmware supports DDNS function. Before using this function, please have a DDNS account and some info from your DDNS server. Press the DDNS Configuration button to configure it. (see figure 3.18)

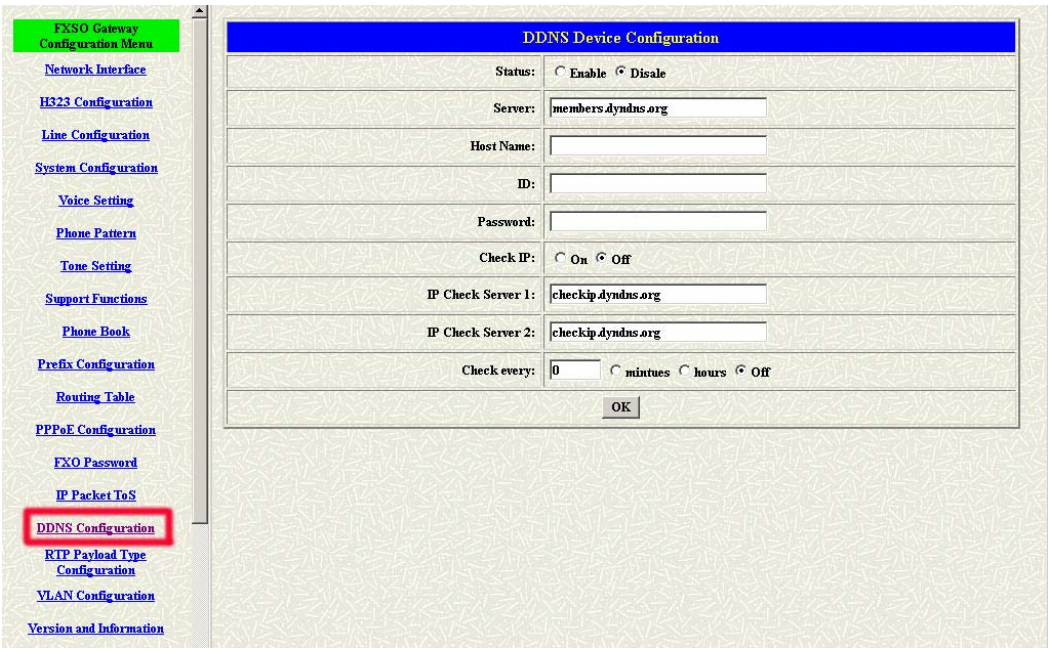

Figure 3.18: DDNS Configuration

- Status – To enable or disable this function.
- Server – Enter the server address of your DDNS server.
- Host Name – Your DDNS address.
- ID – Your account.
- Password – Your password.
  Please get this info from your DDNS server.
- IP Check Server --
- Check Every --

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3.9 Version and Information

This is not for the configuration, it only show you the version of this firmware and some information about the firmware you use. Press the button and get more information about your firmware (see figure 3.19)

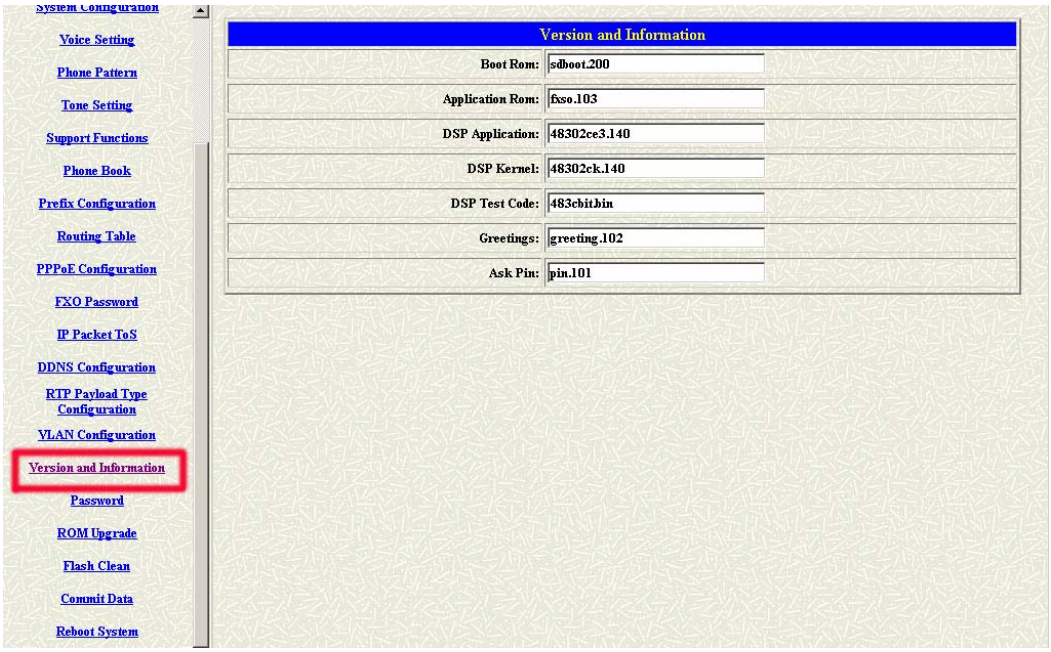

Figure 3.18: VLAN Configuration

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4. Command List

4.1 Hyper Terminal Setting

A terminal emulator is needed when using RS-232 port to configure Gateway. There are kinds of terminal emulator software. Here, we use Microsoft HyperTerminal to depict how to set up terminal emulator:

1. Execute the *Hyper Terminal* program, and then the following windows will pop-up on the screen. (START – Program files – Accessories – Communication – Hyper Terminal)

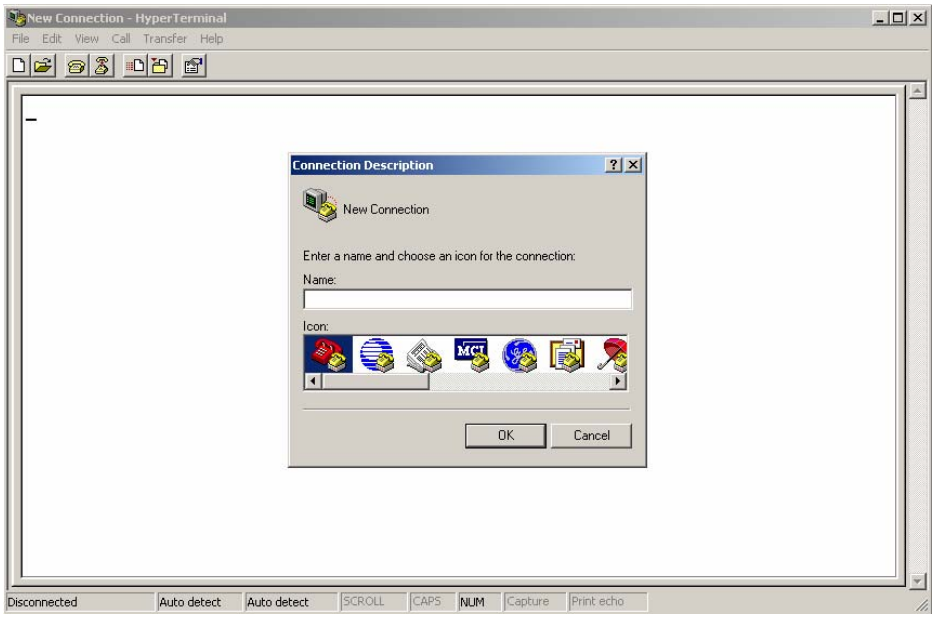

Figure 4.1: Hyper Terminal

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2. Define a name such as ‘voip’ for this new connection.

Figure 4.2: Edit the name of the connection

3. After pressing OK button, the next window appear, and then choose ***COM1/2 Port***, which you are going to use.

Figure 4.3: Pick up the right interface to use

4. Configure the COM Port Properties as following:
   - Bits per second: 9600
   - Flow control: None

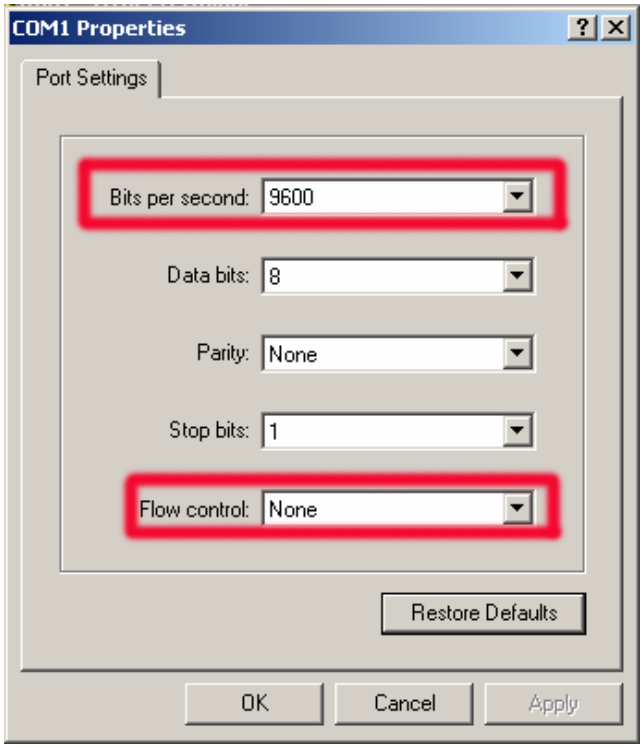

Figure 4.4: Configure the right Bps and control

5. Press ‘OK’ button, and then start to configure Gateway.

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4.2 Command List

4.2.1 [help]

Type **help** or **man** or **?** to list all the available command.

```
usr/config$ help

help          help/man/? [command]
quit          quit/exit/close
debug         show debug message
reboot        reboot local machine
flash         clean configuration from flash rom
commit        commit flash rom data
ifaddr        Internet address manipulation
time          show current time
ping          test that a remote host is reachable
pppoe         PPPoE stack manipulation
sysconf       System information manipulation
h323          H.323 information manipulation
line          Line information manipulation
route         Routing information manipulation
prefix        Prefix drop/insert information manipulation
pbook         Phone book information manipulation
voice         Voice information manipulation
support       Special Voice function support manipulation
phone         Setup of call progress tones and ringing
tone          Setup of disconnect tone
fxopwd        Setup of FXO password
record        Record voice for greeting and ask pin code
tos           IP Packet ToS (Type of Service) values
ddns          Dynamic DNS update manipulation
vlan          VLAN configuration and information
pt            DSP payload type configuration and information
rom           ROM file update
```

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passwd Password setting information and configuration

usage: help [command]

4.2.2 [quit]

Type **quit** will quit the Gateway configuration mode and turn back to login prompt (in console mode) or disconnect (in TELNET mode).

```
usr/config$ quit
Disconnecting...
login:
```

Note: It is recommended that type the "**quit**" command before you leave the console. If so, Gateway will ask password again when next user connects to console port.

4.2.3 [debug]

Open debug message will show up specific information while Gateway is in operation. After executing the debug command, it should execute command **debug -open** as well. One example is demonstrated below.

```
usr/config$ debug -add h323 vp h323vp
usr/config$ debug -open
```

In this example, user open debug flags including h323, vp, h323vp.

Parameters Usage:

-status	Display the enabled debug flags.
-add	Add debug flag.
	-- h323 : h323 related information
	-- vp : voice related information
-delete	Remove specified debug flag.
-open	Start to show debug messages.
-close	Stop showing debug messages.

4.2.4 [reboot]

After **commit** command, type **reboot** to reload Gateway in new configuration. The procedure is as below:

```
usr/config$ reboot
```

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.Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done

Hardware auto detect...
Hardware Type : 1FXS + 1FXO

HTTPD initialized...
cmInitialize succeed!
Ras port:1024
CallSignal port:1720

AC4804[0] is ok
successful 1 4
Initialize OSS libraries...OK!
VP v1.44 stack open sucessfully.

login::

4.2.5 [flash]

This command will clean the configuration stored in the flash ROM and reboot Gateway in factory default setting.

Parameter Usage:

-clean clean all the user defined values, and reboot Gateway in factory default mode.

Note: It is recommended that use "flash –clean" after application firmware id upgraded.

Warning: Only user who login with **root** can execute this command. Configurations of IP address and MAC address will be kept.

4.2.6 [commit]

Save changes after configuring Gateway.

---

usr/config$ commit

This may take a few seconds, please wait....

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Commit to flash memory ok!
usr/config$

*Note: Users shall use **commit** to save modified value, or they will not be activated after system reboot.*

4.2.7 [ifaddr]

Configure and display Gateway network information.

usr/config$ ifaddr

LAN information and configuration
Usage:
ifaddr [-print]\[-dhcp used]\[-sntp mode [server][-cmcenter ipaddress]]
ifaddr [-ip ipaddress] [-mask subnetmask] [-gate defaultgateway]

-print Display LAN information and configuration.
-ip Specify ip address.
-mask Set Internet subnet mask.
-gate Specify default gateway ip address
-dhcp Set DHCP client service flag (On/Off).
-sntp Set SNTP server mode and specify IP address.
-timezone Set local timezone.
-ipsharing Specify usage of an IP sharing device and specify IP address.
-ipchange Replace IP address if the shared IP is changed.
-cmcenter Specify IP address of management center.
Note:
Range of ip address setting (0.0.0.0 ~ 255.255.255.255).
DHCP client setting value (On=1, Off=0). If DHCP set to 'On',
Obtain a set of Internet configuration from DHCP server assgined.
SNTP mode (0=no update, 1=specify server IP, 2=broadcast mode).
Example:
ifaddr -ip 210.59.163.202 -mask 255.255.255.0 -gate 210.59.163.254
ifaddr -dhcp 1
ifaddr -sntp 1 210.59.163.254

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ifaddr -ipsharing 1 210.59.163.254
ifaddr –ipchange 1

usr/config$

Parameters Usage:

-print	print out current [ifaddr] settings and status
-ip	assign IP address for Gateway
-mask	assign internet subnet mask
-gate	assign IP default gateway
-dhcp	Enable/Disable Dynamic Host Configuration (1 = ON; 0 = OFF)
-sntp	Simple Network Time Protocol (1 = ON; 0 = OFF) When SNTP function is activated, users have to specify a SNTP server as network time source. An example is demonstrated below:
-timezone	set local time zone according to GMT

---

usr/config$ ifaddr -sntp 1 10.1.1.1

10.1.1.1 stands for SNTP server's IP address.

-ipsharing To specify a global fixed IP address, user can add this IP address in the command.

usr/config$ ifaddr -ipsharing 1 210.11.22.33

If the IP address is not a fixed one, the dedicated IP address is not necessary in the command. However, dynamic IP Address is not working in Peer-to-Peer mode. It only supports some Gatekeeper.

---

usr/config$ ifaddr -ipsharing 1

-ipchange This is for a special function of IP-Sharing. Some devices could support different ip address from WAN and DMZ port. This function has to be enable if the ip address of DMZ port

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is different from the WAN port.

---

usr/config$ ifaddr -ipchange 1

-cmcenter Specify a management center IP Address

4.2.8 [time]

When SNTP function of Gateway is enabled and SNTP server can be found as well, type **time** command to show current network time.

---

usr/config$ time
Current time is THU JAN 01 05:29:23 1970

4.2.9 [ping]

Use **ping** to test whether a specific IP is reachable or not.
For example: if 192.168.1.2 is not existing while 192.168.1.254 exists. Users will have the following results:

---

usr/config$ ping 192.168.1.2
no answer from 192.168.1.2
usr/config$ ping 192.168.1.254

PING 192.168.1.254: 56 data bytes
64 bytes from 192.168.1.254: icmp_seq=0. time=5. ms
64 bytes from 192.168.1.254: icmp_seq=1. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=2. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=3. time=0. ms
----192.168.1.254 PING Statistics----
4 packets transmitted, 4 packets received, 0% packet loss
round-trip (ms) min/avg/max = 0/1/5
usr/config$

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4.2.10 [pppoe]

Display PPPoE related information.

PPPoE device information and configuration
Usage:
pppoe [-print]\|[-open]\|[-close]
pppoe [-dev on/off][-id username][-pwd password]
-print Display PPPoE device information.
-dev Enable(=1) or Disable(=0) device.
-id Connection user name.
-pwd Connection password.
-reboot Reboot after remote host disconnection.

Paremeter Usage:

-print	print out PPPoE status.
-dev	Enable/Disable PPPoE Dial-up function
-id	Input the User name ID provided by ISP
-pwd	Input the User name password provided by ISP
-reboot	gateway will automatically reboot if connection is broken (***pppoe –reboot 1***)

4.2.11 [sysconf]

This command displays system information and configurations.

---

usr/config$ sysconf

System information and configuration
Usage:
sysconf [-idtime digit][-keypad dtmf][-prefixsw digit]
[-prefixdisab digit][-usrdefprefix digits]
[-codec digit][-localrbt digit][-forwardtime digit]
[-hwtype digit][-gwprefix digit][-ring on_time off_time]
[-fxotype digit]
sysconf -print

-print Display system overall information and configuration.

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-idtime Inter-Digits time.(1~10 sec)
-forwardtime Forward time for FXS line if no answer.(5~65535 sec)
-keypad Select DTMF type: 0=In-band,
1=H.245 Alphanumeric,
2=H.245 SignalType,
3=Q.931 UserInfo.
4=RFC2833.
-prefixsw User defined local zone prefix switch.(ON:1 / OFF:0)
*-prefixdisab Local zone prefix disable character.(one character from 0~9, *, or NONE('-' key))*
-usrdefprefix User defined local zone prefix.(0 ~ 20 digits)
-codec Codec select method.(Caller:0 / Master:1)
-localrbt Local ring back tone.(Enable:1 / Disable:0)
-gwprefix Drop gateway prefix when call from IP(Keep:0/Drop:1).
-hwtype Hardware type.(Auto:0 / 1FXS+1FXO:1 / 2FXS+2FXO:2)
-ring The ring time for ring detection.(Uint:ms)
-eod End of dial..(Enable:1 / Disable:0)
-fxotype FXO type.(Normal:0 / Force 2nd dial:1)

Example: sysconf -ring 500
usr/config$

Parameters Usage:

-print print out all current settings

-idtime set the duration(in second) of two pressed digits in dial mode as timed out. If after the duration user hasn't pressed next number, it will dial out all number pressed. (1-10 seconds)

-forwardtime set forward time(5-65535 seconds)for FXS Line. If callee hasn't answered the call in this time, call will be forward to assigned number in [line] command. (please refer to ***[line]*** command for forward setting)

-keypad DTMF replay type. When value is "0", Gateway will transfer DTMF signal via In-Band type, "1" via H.245 UII Alphanumeric, "2" via H.245 UII Signal Type, and "3" via Q.931 UserInfo, and "4" via RFC2833 type. Users can adjust the value according to various applications.

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-prefixsw switch on/off prefix function. If user enables prefix function, once user dials out, gateway will automatically add prefix number before number user dialed.

-prefixdisab set disable key (0,1,~9, *) to disable the prefix function in this current call. For example, if user has set prefix as 100, and wants to dial out 100123, user can only press 123, to dial out 100123.However, if user wants to dial 123 without prefix, user can press prefix disable key, for example "*", user can press "*", then dial 123, gateway will dial out 123 without adding prefix.

-usrdefprefix define prefix number.

Note: User can also define IP address here in P2P mode, once user press "#", Gateway will call out this IP address.

Note:

"refixsw", "prefixdisab", "usrdefprefix" commands must work together.

-codec set who is the one to determine voice codec during negotiation. 0 is caller will determine the codec, and 1 is mater will determine the codec. (During negotiation 2 endpoints will compare gateway type level to determine who is master.)

-localrbt Enable/Disable locally generate ring back tone. "0" means gateway will receive ring back tone from remote callee, "1" means gateway will generate ring back tone locally.

-gwprefix drop or keep gateway prefix . "0" means when gateway has incoming call from IP side, it will not drop prefix before searching for callee number. "1" means when gateway has incoming call from IP side, it will drop prefix before searching for called number.

Note:

1. *If user wants to implement one-stage dialing in FXO Line, this function must be enabled, and user has to dial prefix number (instead of Line number of FXO Line)+ PSTN number to make a call to PSTN side connected with FXO Line.*
2. *After gateway-prefix-drop function is enabled, user must remember to re-configure line number of FXS Line,*

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because line number of FXS Line must remove prefix number. For example, origin line number of FXS line is 1001, prefix is 100, since prefix number will be drop, once gateway has incoming call 1001, after drop gateway prefix 100, it will search line number "1". So line number must be set as "1".

-hwtype application rom file are the same no matter how many ports is the module, so after user downloads the application rom file, user can select which hardware type is . "0" means gateway will automatically detect the hardware type, "1" means the hardware type is 1FXS+1FXO, "2" means the hardware type is 2FXS+2FXO.

Note:

The default value is to auto detect hardware type. Usually it is not necessary to change this setting. Please make sure about your Hardware Type, Gateway may be not functional if set wrong hardware type.

-ring ring time for ring detection(in ms). When Gateway has incoming call from PSTN side to FXO port, Gateway will determine it is a ring but not noise only if it is longer than this ring time.

Note:

In Taiwan the ring time of PSTN usually is 1000ms, so if user set ring time longer that 1000ms, FXO port may not be able to pick up the call from PSTN side.

-eod It will transfer the DTMF in "#" if users disable the end of dial function. Users have to press the key pad in "#" if the end of dial function is enable.

-fxotype It's for the 2nddial function. Any calls will be two-stage-dialing if user enable this function.

4.2.12 [h323]

This command is for H.323 configuration related parameters.

---

usr/config$ h323

H.323 stack information and configuration

Usage:

-print	*Display H.323 stack information and configuration.*
-mode	*Configure as Gatekeeper mode or Peer-to-Peer mode.*
-gk	*Gatekeeper ip address. (0.0.0.0 ~ 255.255.255.255)*
-algk	*Second Gatekeeper ip address. (0.0.0.0 ~ 255.255.255.255)*
-gwtype	*Gateway Type (1 = Gateway and 0 = Terminal).*
-dfgw	*Default Gateway ip address (0.0.0.0 ~ 255.255.255.255).*
-prefix	*Prefix number.*
-line1	*Line 1(TEL 1) E.164 number.*
-line2	*Line 2(LINE 1) E.164 number.*
-line3	*Line 3(TEL 2) E.164 number.*
-line4	*Line 4(LINE 2) E.164 number.*
-alias	*IP side registered H323 ID.*
-display	*String representing display information for reporting to the called party.*
-gkdis	*Gatekeeper discovery (On=1, Off=0).*
-gkid	*Gatekeeper ID.*
-rtp	*RTP port number (1024~65532).*
-ttl	*RAS TTL time (0~3600 second).*
-gkfind	*Gatekeeper finding port (1024~65535).*
-gkras	*Gatekeeper RAS port (1024~65535).*
-h225	*H225 ras port (1024~65535).*
-q931	*H225 call signal port (1024~65535).*
-dstq931	*Destination H225 call signal port (1024~65535).*
-range	*Dynamically allocated port range (1024~65535).*
-respto	*Max waiting time for 1st response to a new call (1~200).*
-connto	*Max waiting time for call establishment after receiving 1st response of a new call (1~20000).*
-passwd	*H.235 security password.*

Example:

h323 -gk 210.59.163.171 -line1 70 -line2 71 -line3 72 -line4 73

h323 -alias Your_Alias_Name -gkid GK -gkdis 1 -passwd 1234

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usr/config$

Parameters Usage:

-print	print current h323 related settings
-mode	alternatives for gatekeeper or peer-to-peer mode (0=gatekeeper mode; 1=peer-to-peer mode). If users select gatekeeper mode, a valid gatekeeper is needed when Gateway is in operation.

---

usr/config$ h323 –mode 1 (peer to peer mode)

-gk	to assign gatekeeper's IP address when Gateway is in gatekeeper mode.
-algk	assign second gatekeeper's IP address as redundancy. If Gateway fails to register to main GK for 10 time, it will try to register to alternative GK.
-gwtype	gateway type has two kinds, gateway and terminal. Gateway type – device will register as H.323 defined Gateway, user has to define [prefix] in next command. Terminal type – device will register as H.323 defined Terminal, [prefix] command is not necessary.
-dfgw	default gateway is applied under Peer-to-Peer mode. User defines a constant default gateway IP address, then any number dialed if the number is not listed in phone book table will pass forward to this IP Address.
-prefix	assign Gateway prefix number, as well as the registered number on the Gatekeeper.
-line1	assign FXS TEL1 number.
-line2	assign FXO Line1 number.
-line3	assign FXS TEL2 number.
-line4	assign FXO Line2 number.

Note:

User can also set "x" in line number to disable the port. If the port is disabled, it can only receive calls but not calling out.

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Note:

1. This is for 2FXSO, for 1FXSO model, there are only line1 and line2 command.
2. Line1~Line4 number must follow the prefix number if device is configured as **Gateway Type**. For example, if prefix number is 999, then the line1 & line2's number are 9991 & 9992.
3. If Gateway is configured as **Terminal Type**, each line will register to GK with it's own number, prefix number is not needed.
4. No matter in GK or P2P mode, user only needs to dial line number to reach local port. For example, in P2P mode, user wants to dial from FXS TEL1 to FXO Line1, only need to dial number of line2.

-alias	H.323 ID. If in gatekeeper mode, this h.323 ID must be different from others who are registering to the same gatekeeper.
-display	An addition name for special application if callee needs this r to recognize in called site.
-gkdis	set auto discovery function on or off. If this function is enabled and IP address of GateKeeper is set as 255.255.255.255, LAN Phone will multicast to search a GateKeeper on network with configured GateKeeper name (please refer to -gkid); if IP address of GateKeeper is set, before LAN Phone register to the assigned GateKeeper, it will send out GRQ(GateKeeper Request) message with configured GateKeeper name to GateKeeper first.
-gkid	set GateKeeper name for GateKeeper discovery. When Gateway send out GateKeeper discovery message will search GateKeeper with this GateKeeper name. (please refer to -gkdis)
-rtp	to allocate RTP port range—NOT RECOMMENDED. This may be used when RTP port range conflicts with Firewall policy. (each port of Gateway use 2 RTP ports)
-ttl	to set timer for TTL(Time To Live). Gateway would send RRQ, with keepAlive, to gatekeeper periodically according to TTL timer.

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-gkfind	gatekeeper finding port. Port number, which Gateway uses it to discover a gatekeeper. Default value is 1718.
-gkras	to set default gatekeeper RAS port number. Default value, 1719, is well-known port for RAS communication.
-h225	to specify H.225 RAS port number.
-q931	to specify H.225 signal port number.
-dstq931	to specify destination H.225 signal port number.
-range	To allocate port range (1500-65535) Gateway may use it.
-respto	Maximum response time out
-connto	Maximum connection time out
-passwd	set H.235 security password. If user's GK need H.235 security token password to authenticate, user have to input topen password in this command. (please refer to your retailer of GK for information about token password if they implement this function in their GK)

Note: From –rtp to –conneto commands are for advanced users, please do not change the default settings if not necessary.

4.2.13 [line]

This command is for configure each line parameters of Gateway.

---

usr/config$ line

Gateway line information and configuration
Usage:
line -config number [hunt number][hotline number][forward number]
line -print Gateway line information.
hunt Hunting group.
hotline Hot line configuration.
forward No answer forward for FXS line.
Example:
line -config 1 hunt 1 hotline 1003 forward 1002

usr/config$

Parameter Usages:

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-print print out all current settings of line

-config determine which line to configure

-hunt set hunting group flag of each line. User can assign different hunt group number represent different hunt group. For example, if user assigns FXS TEL1 as hunt group 1, and FXS TEL2 as hunt group 2, they will be determined as 2 different groups. On the other hand, if user assigns FXS TEL1 as hunt group 1, and FXS TEL2 as hunt group 1 too, when having incoming call to FXS TEL1, which is busy, this call will be route to FXS Line2.

Note: *FXO Lines and FXS TELs are treated as 2 different groups, so even they are in the same hunt group, call will only be routed to the same FXS or FXO Lines.*

-hotline set hotline table.The Hotline Mode is applied in limited two channels. User just picks up the phone set of one FXS TEL or calls in one FXO line, and gateway will automatically dial out a phone number. In the other hand, user will hear ring back tone or dial tone immediately depended on configurations of destination device. **Note: This function can both work in GK or P2P mode.**

(1) Call out from FXS Line

GK Mode Usage:

Set gateway under gk mode.

Create a Hotline table with "***line*** " command.

---

usr/config$ line –config 1 hotline 1001

In this example means: if user picks up phone set of FXS Line1, gateway will automatically dial out "1001".

P2P Mode Usage:

Set gateway under P2P mode.

Create phone book table with "***pbook*** " command.

Create a Hotline table with "***line*** " command.

---

usr/config$ pbook –add name ABC ip 10.1.1.1 e164 1001

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usr/config$ line –config 1 hotline 1001

In this example means: if user picks up phone set of FXS Line1, gateway will automatically dial out IP address of "1001".

(2) Call out from FXO Line

GK Mode Usage:

Set gateway under gk mode.

Create a Hotline table with "***line*** " command.

---

usr/config$ line –config 2 hotline 1001

In this example means: if user calls in FXO Line1, gateway will automatically dial out "1001".

P2P Mode Usage:

Set gateway under P2P mode.

Create phone book table with "***pbook*** " command.

Create a Hotline table with "***line*** " command.

---

usr/config$ pbook –add name ABC ip 10.1.1.1 e164 1001
usr/config$ line –config 2 hotline 1001

In this example means: if user calls in FXO Line1, gateway will automatically dial out IP address of "1001".

-forward set no answer forward table for FXS Lines.

Only **FXS** Lines provides No Answer Forward function. For call forward function, it can works under GK or P2P mode.

(1) GK Mode Usage:

---

usr/config$ line –config 1 forward 1002

In this example means: if user calls in FXS Line and hasn't been answered in forward time (please refer to ***[sysconf***

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-forwardtime] command), gateway will automatically forward this call to phone number “1002”.

(2) P2P Mode Usage:

---

usr/config$ line –config 1 forward 1002

In this example means: if user calls in FXS Line1 when Line1 is busy, gateway will automatically forward this call to IP address of “1002” in Phone book.

4.2.14 [route]

This command is to set routing table for Gateway.

```
usr/config$ route
Routing table information and configuration
Usage:
route -add [prefix number][dst number][e164 number]
        [min number][max number][hunt number]
route -delete index
route -modify index [prefix number][dst number][e164 number]
        [min number][max number][hunt number]
route -ip [dst number][e164 number]
route -fxs [dst number][e164 number]
route -fxo [dst number][e164 number]
route -print     Routing table information.
        prefix   The prefix of dialed number.
        dst      Destination port(FXS:0/FXO:1/IP:2).
        e164     Destination e164 number(when destination is FXS or
                 FXO).
          min      Min digits.(0 ~ 255)
          max      Max digits.(0 ~ 255)
          hunt     Hunt method for busy forward(NONE:0 / GROUP:1 /
                   ALL:2)
Example:
      route -add prefix 100 dst 0 e164 1001 min 1 max 3 hunt 1
      route -ip dst 0 e164 1001
```

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route -fxs dst 2
route -fxo dst 0 e164 x
route -modify 1 prefix 100 dst 0 e164 1001 min 1 max 3 hunt 1
route -delete 1
usr/config$

Parameter Usages:

-print	print out all routing table information
-add	add a routing rule in routing table. User can add less than 50 rules. (***route –add prefix "prefix number" dst "destination port type" e164 "e.164 number of port" min "minimum digits needed" max "maximum digits can't be exceeded"***)
-delete	delete a routing rule in routing table (***route –delete "index of routing rule"***)
-modify	modify a routing rule in routing table. (***route –modify "index of routing rule" prefix "prefix number" dst "destination port type" e164 "e.164 number of port" min "minimum digits needed" max "maximum digits can't be exceeded"***)
-ip	create routing table for incoming call from IP side. (***route –ip dst "destination port type" e164 "e.164 number of port"***)
-fxs	create routing table for incoming call from FXS TELs. (***route –fxs dst "destination port type" e164 "e.164 number of port"***)
-fxo	create routing table for incoming call from FXO Lines. (***route –fxo dst "destination port type" e164 "e.164 number of port"***)
prefix	prefix of dialed number
dst	destination port, 0 means FXS TELs, 1 means FXO Lines, 2 means IP side, x means no determinate number.
e164	destination e.164 number. This only need to be set when routed port is FXS TELs or FXO Lines to determine which port will this call be routed to.
min	minimum digits needed.
max	maximum digits needed.
hunt	set hunt method for busy forward. 0 means no hunting, 1

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means hunting method follows the rule of ***[line]***, 2 means hunting method is to hunt between all ports in the same type, for example, destination port is FXS TEL will hunt in all FXS TELs, destination port is FXO Lines will hunt in all FXO Lines.

Usage Example:

1. ***route –add prefix 100 dst 0 e164 1001 min 1 max 3 hunt 1***
   This command means if gateway has incoming call's prefix number is 100, and total digits is between 1 to 3, this call will be routed to FXS TEL 1001, and if TEL 1001 is busy, call will be routed to another FXS TEL.
2. ***route –ip dst 1 e164 1002***
   This command means incoming call from IP side will be routed to FXO Line of number 1002.
3. ***route –fxs dst 1 e164 1002***
   This command means incoming call from FXS TELs will be routed to FXO Line of number 1002.
4. ***route –fxo dst 2***
   This command means incoming call from FXO Lines will be routed to IP side.

Note:

(1) When destination is IP side, e.164 number doesn't need to determine. (Ex. route –fxs dst 2)

(2) If user doesn't want to determine a specific port to route, e.164 number must set as "x". (Ex. route –ip dst 1 e164 x)

(3) Default value: Incoming call from FXS and FXO ports will be forward to IP side.

4.2.15 [prefix]

This command is for make rules for drop or insert prefix digits.

---

usr/config$ prefix

Prefix drop/insert information and configuration
Usage:
prefix -add [prefix number][drop number][insert digits]

prefix -delete index
prefix -modify index [prefix number][drop number][insert number]
prefix -print Prefix drop/insert information.
prefix The prefix of dialed number.
drop Drop prefix(Enable:1/Disable:0).
insert Insert digits.
Example:
prefix -add prefix 100 drop 1 insert 2000
prefix -add prefix 100 drop 1
prefix -add prefix 100 drop 0 insert 200
prefix -delete 1
prefix -modify 1 prefix 100 drop 0 insert 300

usr/config$

Parameter Usages:

-add add a rule to drop or insert prefix digits of incoming call.(***prefix –add prefix "prefix number" drop 0/1 insert "insert number"***)

-delete delete a rule to drop or insert prefix digits of incoming call. (***prefix –delete prefix "prefix number"***)

-modify modify a rule to drop or insert prefix digits of incoming call. (***prefix –modify prefix "prefix number" drop 0/1 insert "insert number"***)

prefix set which prefix number to implement prefix rule.

drop enable or disable drop function.If this function is enabled, Gateway will drop prefix number on incoming call.

insert set which digit to insert on incoming call.

4.2.16 [pbook]

Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users also have to reboot the machine, and the record will be effective immediately.

---

usr/config$ pbook

Phone book information and configuration

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Usage:

pbook [-add [name string][e164 number][ip address]
[port number][drop digit][insert number]]
[-modify number [name string][e164 number][ip address]
[port number][drop digit][insert number]]
[-delete number]
pbook -print

-print Display phone book information and configuration.
-add Add new phone book record)
-delete Delete phone book record
-modify Modify phone book record.
name : 1 ~ 10 characters.
e164 : 1 ~ 10 digits.
ip : IP adress.
port : 1024 ~ 65535.
drop : 0:Disable/1:Enable.
insert : 1 ~ 10 digits.

Example:

pbook -add name test e164 1234 ip 192.168.1.10 port 1720 drop 1 insert 5678
pbook -delete 1
pbook -modify 1 name test e164 5678 ip 192.168.1.10 port 1720 drop 0

usr/config$

Parameter Usages:

-print print out current contents of Phone Book. (***pbook -print***) Users can also add *index number*, from 1 to 100, to the parameter to show specific phone number. (Ex. ***pbook –print 1***)

Note: <index number> means the sequence number in phone book. If users do request a specific index number in phone book, Gateway will give each record a automatic sequence number as index.

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-add	add a new record to phone book. When adding a record, users have to specify ***name***, ***ip***, and ***e164*** number to complete the command.
name	name to represent callee.
e164	e.164 number for mapping with IP address of callee
ip	ip address of callee
port	call signal port number of callee
drop	drop e.164 number when dial out. 0 means to keep e.164 number, 1 means to drop e.164 number when dialing out.
insert	insert digits.(1~10 digits)
-delete	delete a specific record. “pbook –delete 3” means delete **index 3** record.
-modify	modify an existing record. When using this command, users have to specify the record’s index number, and then make the change.

PhoneBook Rules:

The e164 number defined in phone book will fully carry to destination. It is not just a representative number for destination’s IP Address. In other words, user dial this e164 number to reach destination, destination will receive the number and find out if it is matched to its e164, including Line number in some particular device.

4.2.17 [voice]

The voice command is associated with the audio setting information. There are four voice codecs supported by Gateway.

---

usr/config$ voice

Voice codec setting information and configuration
Usage:
voice [-send [G723 ms] [G711A ms] [G711U ms] [G729 ms] [G729A ms] [G729B ms] [G729AB ms]]
[-volume [voice level] [input level] [dtmf level]]
[-nscng [G711U used1] [G711A used2] [G723 used3]]
[-echo used] [-mindelay t1] [-maxdelay t2] [-optfactor f]
voice -print

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voice -priority [G723] [G711A] [G711U] [G729] [G729A] [G729B] [G729AB]

-print Display voice codec information and configuration.
-send Specify sending packet size.
G.723 (30/60 ms)
G.711A (20/40/60 ms)
G.711U (20/40/60 ms)
G.729 (20/40/60 ms)
G.729A (20/40/60 ms)
G.729B (20/40/60 ms)
G.729AB (20/40/60 ms)
-priority Priority preference of installed codecs.
G.723
G.711A
G.711U
G.729
G.729A
G.729B
G.729AB
-volume Specify the following levels:
voice volume (0~63, default: 28),
input gain (0~63, default: 28),
dtmf volume (0~31, default: 23),
-nscng No sound compression and CNG. (G.723.1 only, On=1, Off=0).
-echo Setting of echo canceller. (On=1, Off=0, per port basis).
-mindelay Setting of jitter buffer min delay. (0~150, default: 90).
-maxdelay Setting of jitter buffer max delay. (0~150, default: 150).
Example:
voice -send g723 60 g711a 60 g711u 60 g729 60 g729a 60 g729b 60 g729ab 60
voice -volume voice 20 input 32 dtmf 27
voice -echo 1 1
usr/config$

Parameters Usage:

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-print print current voice information and configurations.

-send define packet size for each codec. 20/40/60ms means to send a voice packet per 20/40/60 milliseconds. The smaller the packet size, the shorter the delay time. If network is in good condition, smaller sending packet size is recommended. In this parameter, 20/40/60ms is applicable to G.711u/a law, and G.729/G.729A/G.729B/G.729AB codec, while 30/60ms is applicable to G.723.1 codec.

-priority codec priority while negotiating with other h323 device. This parameter determines the listed sequence in h.245 TCS message. The codec listed in left side has the highest priority when both parties determining final codec. User can also select the particular codec without others.

---

usr/config$ voice –priority g723 (only select this codec)
usr/config$ voice –priority g723 g729 g711u g711a (select four codecs, and g723 is the first choice)

Note:

(1) For 2FXSO there are 2 version of Application rom, please check version of Application rom (rom –print). If the version is 2fxso729.102, 2FXSO doesn't have codec G.723.1. If the version is sfxso723.102, 2FXSO doesn't have codec G.729 series.

(2) For 1FXSO, the Application rom has the only one version which is named fxso.102 provide all codec.

-volume There are three adjustable value. **voice volume** stands for volume, which can be heard from Gateway side; **input gain** stands for volume, which the opposite party hears; **dtmf** volume stands for DTMF volume/level, which sends to its own Line.

Note, level of volume is too high or too low may be result in bad performance while connecting to each other.

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-nscng silence suppression and comfort noise generation setting (1 = ON; 0 = OFF). It is applicable to G.723 codec only. An example is demonstrated below:

---

usr/config$ voice -nscng g723 1

-echo activate each canceler (1 = ON; 0 = OFF).
-mindelay the minimum jitter buffer size. (Default value= 90 ms)
-maxdelay the minimum jitter buffer size. (Default value= 150 ms)

---

usr/config$ voice –mindelay 90 –maxdelay 150

---

*Note: be sure to know well the application before you change **voice** parameters because this might cause incompatibility.*

4.2.18 [support]

This command provides some extra functions that might be needed by users.

---

usr/config$ support

Special Voice function support manipulation
Usage:
support [-t38 enable][-t38ecm enable][-faxrdd digits]
[-fstart enable][-tunnel enable][-h245fs enable]
support -print
-t38 T.38(FAX) enabled/disabled.
-t38ecm T.38(FAX) ECM enabled/disabled.
-t38asn1 T.38(FAX) ASN.1 support enable/disable.
-faxrdd FAX redundancy depth(0 ~ 2).
-fstart Fast start enabled/disabled.
-tunnel H245 Tunneling enabled/disabled.
-h245fs H245 message after FastStart support enabled/disabled.
-earlyh245 EarlyH245 support enabled/disabled.
Example:
support -t38 1

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support -t38ecm 1
support -t38asn1 1
support -faxrdd 1
support -fstart 1
support -tunnel 1
support -h245fs 1
support -earlyh245 1

usr/config$

Parameter Usages:

-print	print current settings in **support** command.
-t38	to switch ON/OFF (1 = ON; 0 = OFF) T.38 fax ability. When T.38 ability is ON, Gateway will automatically defer codec (G.723 or G.729 series) to T.38 when FAX signal is detected.
-t38ecm	to switch ON/OFF (1 = ON; 0 = OFF) T.38 fax Error Correction Mode ability. When high-speed T.38 FAX is running, Gateway will automatically execute ECM function.
-t38asn1	Enable the ASN.1 support with the FAX.
-faxrdd	set fax redundancy depth. User can increase FAX redundancy depth when network traffic is heavy. For example, if user set fax redundancy as 2, Gateway will resend fax packets every 2 packets.
-fstart	to switch ON/OFF (1 = ON; 0 = OFF) fstartStart function. Fast Start function can shorten the connection time if the opposite party also supports fastStart.
-tunnel	to switch ON/OFF (1 = ON; 0 = OFF) H.245 tunneling function. If the function is ON, Gateway will send H.245 (Call Control messages) via H.225's (Call Signal messages) link. The function is effective only when both sides support H.245 tunnel.
-h245fs	If the function is ON, Gateway can send H.245 messages after FastStart.
-earlyh245	enable/disable early H.245 function. The function is effective only when both sides support early H.245.

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Note: it is not recommended to change the value in this command, only if users do know well the application. This might cause incompatibility with other devices.

4.2.19 [phone]

Gateway's progress tone is configurable. Default tone value is set according to U.S. tone specification. Users may adjust the values according to their own country's tone specification or users-defined tone specification.

---

usr/config$ phone

Phone ringing , ringback tone , busy tone , dial tone setting and notes
Usage:

phone [-ring [freq][ringON][ringOFF][ringLevel]]
[-rbt [freqHi][freqLo][freqHiLev][freqLoLev]
[Tone1ON][Tone1OFF][Tone2ON][Tone2OFF]]
[-bt [freqHi][freqLo][freqHiLev][freqLoLev]
[Tone1ON][Tone1OFF][Tone2ON][Tone2OFF]]
[-dt [freqHi][freqLo][freqHiLev][freqLoLev]
[Tone1ON][Tone1OFF][Tone2ON][Tone2OFF]]
[-flash [freqLo][freqHi]]
phone [-print [ring]\[rbt]\[bt]\[dt]\[flash]]

-print Display phone ringing/tone configuration.
ring : ringing
rbt : ringback tone
bt : busy tone
dt : dial tone
flash: flash tone
-ring ringing configuration set .
-rbt ringback tone configuration set .
-bt busy tone configuration set .
-dt dial tone configuration set .

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-flash flash configuration set .

Note:

ringing frequency : 15 ~ 100 (Unit : Hz)
ringing ring ON/OFF : 0 ~ 8000 (Unit : ms)
ringing level : 0 ~ 94 (Unit : V)
tone frequency : 0 ~ 65535 (Unit : Hz)
tone freqLevel : 0 ~ 65535 (Unit : mVrms)
tone Tone ON/OFF : 0 ~ 8000 (Unit : ms)

Example:

phone -print rbt
phone -ring 20 2000 4000 94
phone -rbt 480 440 8 8 2000 4000 2000 4000
phone -bt 620 480 8 8 500 500 500 500
phone -dt 440 350 8 8 500 1023 1023 1023
phone -flash 100 300

usr/config$

Parameters Usage:

-print print current call progress tone configurations (**ring** – ring tone, **rbt** – ring back tone, **bt** – busy tone, **dt** – dial tone, flash – flash). This parameter should be accompanied with tone type. For example:

---

usr/config$ phone -print rbt

Phone ring back tone paramter
Ringback Tone frequency high : 480
Ringback Tone frequency low : 440
Ringback Tone frequency high level : 13
Ringback Tone frequency low level : 13
Ringback Tone tone1 on : 100
Ringback Tone tone1 off : 200
Ringback Tone tone2 on : 1023
Ringback Tone tone2 off : 1023
usr/config$

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Note:
For tone simulation, Gateway adopts dual frequencies as traditional telephone does. If users want to have their own call progress tone, they can change the value of tones. High and Low frequency/level/cadence can be configured respectively.

-ring to set RING tone value.
The played tone type, when Gateway is receiving a call.
-rbt to set RingBackTone value
The played tone type, when Gateway receives a Q.931 Alerting message. In condition that Gateway is the originate side.
-bt to set BusyTone value.
The played tone type, when destination is busy.
-dt to set DialTone value.
The played tone type, when hook off a phone set of workable Gateway.
-flash set the detective flash range in ms, for example, 300-500 ms.

4.2.20 [tone]

This command is basically for FXO ports.

---

usr/config$ tone

Disconnect tone and remote ring back tone configuration
Usage:

tone [num][freqHi][freqLo][freqHiLev][freqLoLev]
[Tone1ON][Tone1OFF][Tone2ON][Tone2OFF]]
tone -print Display disconnect tone configuration.
[num] Tone index(1~4:Disconnect tone / 5~8:Remote ring back tone).
Example:
tone -print
tone 1 620 480 8 8 50 50 1023 1023

usr/config$

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Parameter Usages:

-print show all tone configuration

[num] tone index. 1~4 is disconnect tone, 5~8 is remote ring back tone.

For FXO ports Gateway must detect disconnect tone to determine when to disconnect the call, so user must set disconnect tone of PBX or PSTN network connected to FXO ports.

When making a call from FXO ports, there are 2 ways to detect callee has already picked up the call, one is to detect reverse signal, the other is to detect the termination of ring back tone, so user must set ring back tone of PBX or PSTN network.

(If user doesn't know about the frequency of disconnect tone or ring back tone, please refer to ***[record]*** command to detect frequency.)

For each tone may has 1 set or 2 sets (high and low) of frequencies. If user wants to set 0 in on/off time, please set "1023" represent "0". (ex. ***tone 1 620 480 8 8 50 50 1023 1023***)

(***tone "index of tone" "frequency of high" "frequency of low" "level of high" "level of low" "on time of high" "off time of high" "on time of low" "off time of low"***)

4.2.21 [fxopwd]

This command is for FXO ports.

---

usr/config$ fxopwd

FXO password information and configuration
Usage:
fxopwd -add [passwd number][direction number]
fxopwd -delete index
fxopwd -modify index [passwd number][direction number]
fxopwd -print FXO password information.
passwd The password.

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direction FXO direction(Out:0/In:1/Both:2).

Example:

fxopwd -add passwd 1234 direction 0

fxopwd -delete 1

fxopwd -modify 1 passwd 1234 direction 2

usr/config$

Parameter Usages:

-print	show all FXO password configuration
-add	add 1 set of FXO password
-delete	delete 1 specific set of FXO password
-modify	modify 1 specific set of FXO password
passwd	password
direction	the direction number which password implement. 0 means to call from IP side to PSTN side, 1 means to call from PSTN side to IP side, 2 means both sides. Once user enables FXO password function, caller will be asked to enter password when call in PSTN side or IP side according to the direction of password being implemented. (***fxopwd –a passwd "password" direction 0/1/2***)

Note:

User can set total 10 sets of password, no matter what the direction is.

4.2.22 [record]

User can record greeting and askpin file and analyze tone frequency by calling in FXO line of Gateway.

---

usr/config$ record

Recoed greeting voice and ask pin code voice, tone analize.

Usage:

record -greeting filename

-askpin filename

-tone

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Example:

record -greeting greeting.100

record -askpin askpin.100

record -tone

usr/config$

Parameter Usages:

-greeting record greeting file. User must assign a file name for greeting, once record is finished, file recorded will be display in rom –print.

---

usr/config$ record -greeting test.100

Please off hook TEL 1 and press (N) for next step...

n

Press (R) to start record...

r

Press (S) to stop record...

.....

.....

.....s.....

.....

.....

Press (P) to play the voice or (W) to write to flash or (Q) to quit...

p

w

Please wait a moment...

Write flash ok...

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```
          Boot Rom    :    sdboot.200
Application Rom    :    fxso.100
           DSP App    :    48302ce3.300
       DSP Kernel    :    48302ck.300
   DSP Test Code    :    483cbit.bin
         Greetings    :    test.100
         Ask Pin       :     askpin.100
q
usr/config$
```

-askpin record askpin file. User must assign a file name for askpin file, once record is finished, file recorded will be display in rom –print.

```
usr/config$ record -askpin askpintest


Please off hook TEL 1 and press (N) for next step...
n

Press (R) to start record...
r

Press (S) to stop record...
.....
.....
.....
.....
.....
.....s.....
.....
.....
.
Press (P) to play the voice or (W) to write to flash or (Q) to quit...
p
w
```

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Please wait a moment...

Write flash ok...

Boot Rom : sdboot.200
Application Rom : fxso.100
DSP App : 48302ce3.300
DSP Kernel : 48302ck.300
DSP Test Code : 483cbit.bin
Greetings : greeting.100
Ask Pin : askpintest
q
usr/config$

Note: Remember to press enter after press any command.

-tone analyze tone frequency. Gateway can analyze tone frequency as user provide tone in FXO Line1.

---

usr/config$ record -tone

Press (R) to start record...
r
.....
.....
.....
.....

Analyzing!! Please wait a moment……..
Frequency 1 : 480
Frequency 2 : 620
Frequency 3 (2623) is more than 1000, please ignore it.
usr/config$

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Note:

1. ***Record ring back tone: user can use FXS Line1 to call FXO Line1, after hearing ring back tone, use this command to detect frequency of ring back tone.***
2. ***Record disconnect tone: Please read the procedure of recording disconnect tone file from the web site in application.***
3. ***The value of disconnect tone and ring back tone will not write in flash automatically. Please use the command in "tone" to write in the tone table.***

The Procedures of recording the disconnect tone

Before you start ：

A PSTN line which connect with the Line 1 port.
A analog phone connect with the Tel 1 port.
Configure Peer-to-Peer mode.

Please record the disconnect tone just follow the stage as below ：

1. Please enter the command before you record the disconnect tone：*record –tone*
2. Make a call from PSTN side into Line 1 port.
3. You will get a greeting when the call enter the gateway.
4. Pease dial the number of the Tel 1 port.
5. The phone will ring if the number you dial is correct.
6. Pick up the phone and make sure the call is connect.
7. Hang up the phone which is from PSTN side and Tel 1 port will get the disconnect tone.
8. When you get the disconnect tone from the phone set of the Tel 1 port, press <**R**> and <**ENTER**> buttons to start recording the disconnect tone.
9. Please hang up the phone if you get the message as below：*Analizing!! Please wait a moment…*
10. There are three values you will get after analyzing. Please leave the value which is over 1000 Hz, this is not the frequency of disconnect tone.
11. Please put the frequency in the tone table just follow the command：

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tone 4 420 680 8 8 25 25 50 50

【Example-1】

(Make a call from PSTN to FXO port)
usr/config$ record -tone

Press (R) to start record...
(Please make sure that you are already finish the steps 2 ~ 7)
r (Press “Enter” button after you key in “R”)
.....
.....
.....
.....

Analizing!! Please wait a moment...
(You coule hang up the call from PSTN if you get this message)

Frequency 1 : 481
Frequency 2 (2623) is more than 1000, please ignore it.
Frequency 3 : 621

tone 4 481 621 8 8 25 25 1023 1023
(Put this value in to the tone table)

tone –print

Disconnect tone 1 paramter
Frequency high : 620
frequency low : 480
frequency high level : 8
frequency low level : 8
Tone1 on : 25
Tone1 off : 25
Tone2 on : 1023
Tone2 off : 1023

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Disconnect tone 2 paramter
Frequency high : 450
frequency low : 0
frequency high level : 8
frequency low level : 0
Tone1 on : 35
Tone1 off : 35
Tone2 on : 1023
Tone2 off : 1023
Disconnect tone 3 paramter
Frequency high : 620
frequency low : 480
frequency high level : 8
frequency low level : 8
Tone1 on : 50
Tone1 off : 50
Tone2 on : 1023
Tone2 off : 1023
Disconnect tone 4 paramter
Frequency high : 621
frequency low : 481
frequency high level : 8
frequency low level : 8
Tone1 on : 25
Tone1 off : 25
Tone2 on : 50
Tone2 off : 50
(Confirm the values is correct or not)

(Key in the commit and reboot command if you finish the procedures as above)
【Example-2】
(Make a call into FXO port)
usr/config$ record -tone

Press (R) to start record...
(Please make sure that you are already finish the steps 2 ~ 7)
r (Press “Enter” button after you key in “R”)

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.....
.....
.....
.....

Analizing!! Please wait a moment...
(You coule hang up the call from PSTN if you get this message)

Frequency 1 : 473
Frequency 2 (2623) is more than 1000, please ignore it.
Frequency 3 (1856) is more than 1000, please ignore it.

tone 4 473 473 8 8 25 25 1023 1023
(Please configure the high and low frequency as the same value if you just get a singal frequency)

tone –print

Disconnect tone 1 paramter
Frequency high : 620
frequency low : 480
frequency high level : 8
frequency low level : 8
Tone1 on : 25
Tone1 off : 25
Tone2 on : 1023
Tone2 off : 1023
Disconnect tone 2 paramter
Frequency high : 450
frequency low : 0
frequency high level : 8
frequency low level : 0
Tone1 on : 35
Tone1 off : 35
Tone2 on : 1023
Tone2 off : 1023
Disconnect tone 3 paramter

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Frequency high : 620
frequency low : 480
frequency high level : 8
frequency low level : 8
Tone1 on : 50
Tone1 off : 50
Tone2 on : 1023
Tone2 off : 1023

Disconnect tone 4 paramter

Frequency high : 621
frequency low : 481
frequency high level : 8
frequency low level : 8
Tone1 on : 25
Tone1 off : 25
Tone2 on : 50
Tone2 off : 50

(Confirm the values is correct or not)

(Key in the commit and reboot command if you finish the procedures as above)

4.2.23 [tos]

IP Packet ToS(type of Service)/Differentiated Service configuration.

---

usr/configtos

IP Packet ToS(type of Service)/Differentiated Service configuration
Usage:
tos [-rtptype dscp]
tos [-sigtype dscp]
tos -print
[-rtpreliab mode]
tos -print

Example:
tos -rtptype 7 -sigtype 0

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Parameter Usages:
-rtptype the packages of voice
-sigtype the package of call signal

Note:
The value of rtptype and sigtype is from 0 to 63.
It's working if it supported by your network.

4.2.24 [ddns]

The dynamic DNS service information and configuration

---

usr/config$ ddns

The dynamic DNS service information and configuration
Usage:
ddns [-print]
ddns [-enable 0/1]
ddns [-serve Address] [-hostname Name] [-id ID]
[-passwd Password]
[-checkip option] [-checkipsrv Address]
[-delay time]
[-force IP]

-print Display Dynamic DNS information and configuration.
-enable 1:Enabled/0:Disable the dynamic DNS service.
-server Specify DDNS server address.
-hostname Registered domain name.
-id Registered account ID.
-passwd Registered account password.
-checkip 1:Enabled/0:Disable check the host current IP address.
-checkipsrv1 Specify IP address check server.
-checkipsrv2 Specify secondary IP address check server.
-delay Setting the service delay time.(1~59 minutes or 1~24 horus)
-force Force execute the dynamic DNS service.
Example:

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ddns -print
ddns -enable 1
ddns -server member.dyndns.org -hostname ipphone.dyndns.org
ddns -delay 30 m (30 minutes)
ddns -delay 12 h (12 hours)
ddns -force 11.22.33.44

Parameter Usages:

-enable enable the DDNS function
-server enter the server address of thr DDNS server you use
-hostname enter the domain name address which you get from the DDNS server
-id key in your id
-passwd key in your password
-checkip enable or disable the check current user's ip address
-checkipsrv1 enter the ip address of the check server
-checkipsrv2 the secondary ip address of the check server
-delay service delay time
-force execute the DDNS function all the times

4.2.25 [pt]

RTP payload type configuration and information

---

usr/config$ pt

RTP payload type configuration and information
Usage:
pt-print Display the RTP payload type information
-rfc2833 Configure the DTMF RFC2833 payload type
-dtmf Configute the DTMF payload type
-fax Configure the FAX payload type
-faxbypass Configure the FAX ByPass payload type
-modembypass Configure the MODEM ByPass payload type
-redundancy Configure the Redundancy payload type
-modemrelay Configure the MODEM Relay payload type

Example:
pt -rfc2833 96 -fax 101

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```
usr/config$
```

4.2.26 [rom]

ROM file information and firmware upgrade function.

```
---------------------------------------------------------------------------------------------
usr/config$ rom

ROM files updating commands
Usage:
rom [-print][-app][-boot][-dsptest][-dspcore][-dspapp][-greet][-askpin]
    -s TFTP/FTP server ip -f filename
rom -print
    -print       show versions of rom files. (optional)
    -app          update main application code(optional)
    -boot         update main boot code(optional)
    -boot2m       update 2M code(optional)
    -dsptest     update DSP testing code(optional)
    -dspcore      update DSP kernel code(optional)
    -dspapp       update DSP application code(optional)
    -greeting    update greeting voice file(optional)
    -askpin       update ask pin code voice file(optional)
    -s            IP address of TFTP/FTP server (mandatory)
    -f            file name(mandatory)
    -method       download via TFTP/FTP (TFTP: mode=0, FTP:
mode=1)
    -ftp          specify username and password for FTP
Note:
    This command can run select one option in 'app', 'boot',
    , 'dsptest', 'dspcore', and 'dspapp'.
Example:
    rom -method 1
    rom -ftp vwusr vwusr
    rom -app -s 192.168.4.101 -f app.bin

usr/config$
```

Parameter Usages:

-print show versions of all rom files

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-app, boot, boot2m, dsptest, dspcore, dspapp, greeting, askpin to update main Application program code, Boot code, DSP testing code, DSP kernel code, DSP application code, greeting file, askpin file.

-s to specify TFTP server's IP address when upgrading ROM files.

-f to specify the target file name, which will replace the old one.

-method to decide using TFTP or FTP as file transfer server. "0" stands for TFTP, while "1" stands for FTP.

-ftp if users choose FTP in above item, it is necessary to specify pre-defined username and password when upgrading files.

4.2.27 [passwd]

For security concern, users have to input the password before entering configuration mode. "**passwd**" command is for password setting purpose.

---

usr/config$ passwd

Password setting information and configuration
Usage:
passwd -set Loginname Password
passwd -clean
Note:
1. Loginname can be only 'root' or 'administrator'
2. passwd -clean will clear all passwd stored in flash,
please use it with care.
Example:
passwd -set root Your_Passwd_Setting

usr/config$

Parameter Usages:

-set

(***passwd –set "login name" "password"***)

Note : "login name" can be "***root***" or "***administrator***" only. "root" and "administrator" have the same authorization, except some

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commands that can be executed by “root” only – “***passwd –clean***”, “***rom –boot***”, ”***rom –bot2m***” and “***flash –clean***”.

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